

Darkroom **Pro**

M A G A Z I N E

**MASTERING
Black & White
Artist and Inventor**

*Steve
Hollinger*

**Sekonic L-478DR
Lightroom 5
Tips & Tricks
Metering Magic**





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Sony Cyber-shot QX100

It's not surprising to find lens caps, lens covers, and dedicated camera bags generally have withered away in a world where it's not uncommon to find a camera lens cap in your pocket or underfoot. But as an occasional gift to self or gift to others, a dedicated camera bag is still a necessary part of the camera kit. The QX100 is a compact camera with a 10x optical zoom lens and a 16.1 megapixel sensor. It's a great choice for those who want a camera that's easy to carry and can fit in a small bag.



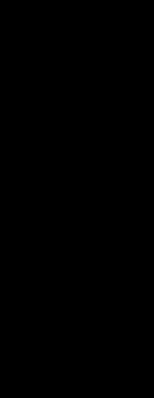
Leica S-System

Renowned for its exceptional image quality, the Leica S-System is a full-frame SLR camera system. It features a range of lenses and accessories that make it a popular choice among professional photographers. The S-System is known for its compact size and high performance, making it a great choice for those who want a camera that's easy to carry and can fit in a small bag.

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Compose Yourself.

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SECRETS

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REFLECTORS

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EDITOR'S FOREWORD

Welcome to the latest edition of DarkroomPro Magazine! A lot has happened since our last publication and we're very pleased with the results. Our subscription rate has increased over 1500% and we've been gratified to have received a number of very positive reviews.

As you know, our aim is to keep the magazine free of charge for all our readers, yet we're committed to bringing you the most comprehensive content we can provide. Our hope is that this issue rises to the occasion and achieves that goal, and that readers benefit from our efforts on their behalf.

We've also received a number of emails containing suggestions and requests for future articles. We are always so touched that people take the time out of their days to provide feedback on our work, and sincerely appreciate your comments. Just as an aside however, we have received a number of notes on our spelling...

Certainly typos can occur, and we're far from perfect; however, our readers should be aware that we are a Canadian publication, and the inclusion of a few extra 'u's etc. should be expected. Hopefully, our American friends won't feel too put out!

Ok, so on to the good stuff!

In this issue, you'll discover all kinds of great articles which hopefully you'll find both informative and entertaining. We've included segments on the Lab colour space, alternatives to the rule of thirds,

hand-held metering, using light modifiers, mastering black and white, software and hardware reviews, and a feature interview with artist and inventor Steve Hollinger.

Enjoy!

Ray Richards,

Editor

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...that line is red



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NEW & NOTEWORTHY



SONY CYBER-SHOT QX100

It's true: smartphones typically have pretty lousy cameras, and dedicated cameras aren't generally built with today's socially connected world in mind. While a few companies have tried to bridge this gap, Sony has addressed this dilemma by creating an external camera that actually clips onto your phone and interfaces with an associated app via wifi or NFC — effectively turning your smartphone into the camera's LCD! Sporting 20.2 megapixel resolution,

28-100mm zoom made by Carl Zeiss with variable apertures of $f/1.8-4.9$, image stabilization, and a micro SD slot, the QX100 retails at \$499 and is sure to be a hit with photographers who want better image quality, but don't want to lug around a DSLR.

LEICA S-SYSTEM

Perennial favourites of non-conformist photographers everywhere, photographic equipment manufacturer Leica has released a new medium format digital photography lineup branded the S-System. Featuring a 30x44mm, 37.5 megapixel CCD sensor, that supports full 16 bit colour, the new body enables captures at ISOs ranging from 100-1600. Coupled with any of the 4 new lenses the company has announced (including an interesting 120mm $f/5.6$ tilt/shift), this camera allows flash sync speeds of up to 1/1000th of a second! While not the fastest body on the planet (1.5 fps), the new S

features integrated GPS, a 2GB buffer (hey these are medium format captures after all), and a 3" TFT display housing 920,000 pixels. The price on the other hand isn't exactly for the faint of heart: \$21,950 — but as they say (and we hope), you get what you pay for!

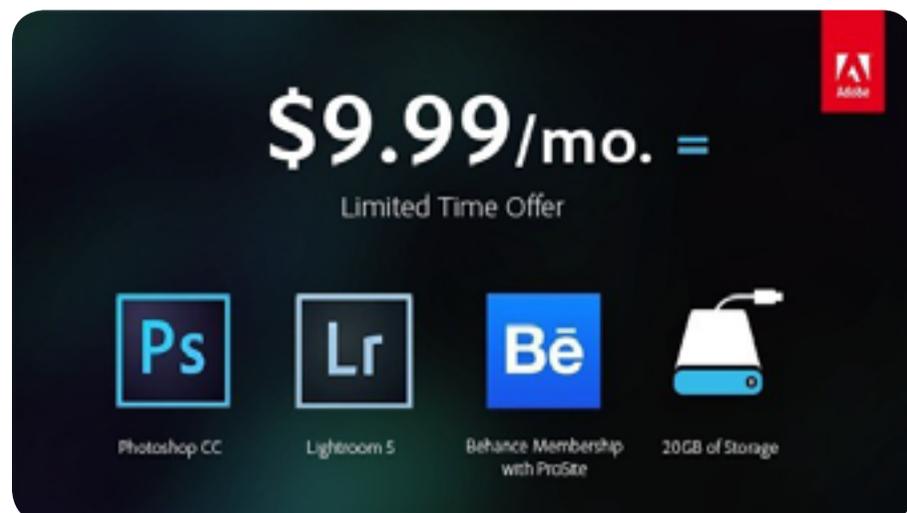


ADOBE CREATIVE CLOUD FOR PHOTOGRAPHERS

Responding to pricing concerns voiced by their customer base over the costs associated with the suite, Adobe has announced the availability of Creative Cloud for Photographers, which includes Lightroom 5.2, Photoshop CC, a Behance membership, and 20GB of cloud storage, all for the low price of \$9.99 per month. This limited time offer is available until December 31, and is limited to

POP-UP FLASH BOUNCE

Photojojo always manages to provide innovative products that are inexpensive and handy, and this unit is no exception. For those times when you don't have an external strobe and are forced to rely on a pop-up flash, instead of dealing with red-eye and hot spots on your image, why not use this great little product to bounce the light off the ceiling? At \$37.00, this smart gadget is sure to improve your photos... and won't break your budget!



existing Creative Suite customers who own CS3 or above. This release should definitely be welcome news for those that are looking for a deal on this excellent software collection.



HYETIS CROSSBOW

And now from the WTF department, comes a 41 megapixel watch. That's right. While its questionable grammar laden website lists the unit as only available for pre-order at \$1200 ('earlybirds special'), the company promises the timepiece with 'best Swiss design', will include biometric sensors, microphone, altimeter, thermometer, and wirelessly interface with apps on iOS and Android, as well as Windows 8... hey it might even tell time too!

FRESH FACES

Sarolata Ban



Born in 1982 in Budapest, Hungarian artist Sarolata Ban originally made her creative debut as a jewelry designer. Later, upon encountering the art associated with

Fresh Faces



the digital manipulation of photographs, Ms. Ban discovered her passion for the medium. A master compositor, Sarolta combines unlikely subjects into a surreal

Sarolta Ban



stew, certain to capture one's attention. Quirky and thought provoking, Sarolta Ban's compositions are meant to stand on their own, with the audience ascribing

Sarlotay Ban



whatever meaning they may obtain by way of viewing them. With her work being featured in nearly 50 different periodicals, album jackets, and book covers,

Fresh Faces



Sarolta's images have also won several prizes, including Elle Magazine's Young Artist Talent Award in 2011. As anyone can clearly see, Sarolta's compositing

Sarloty Ban



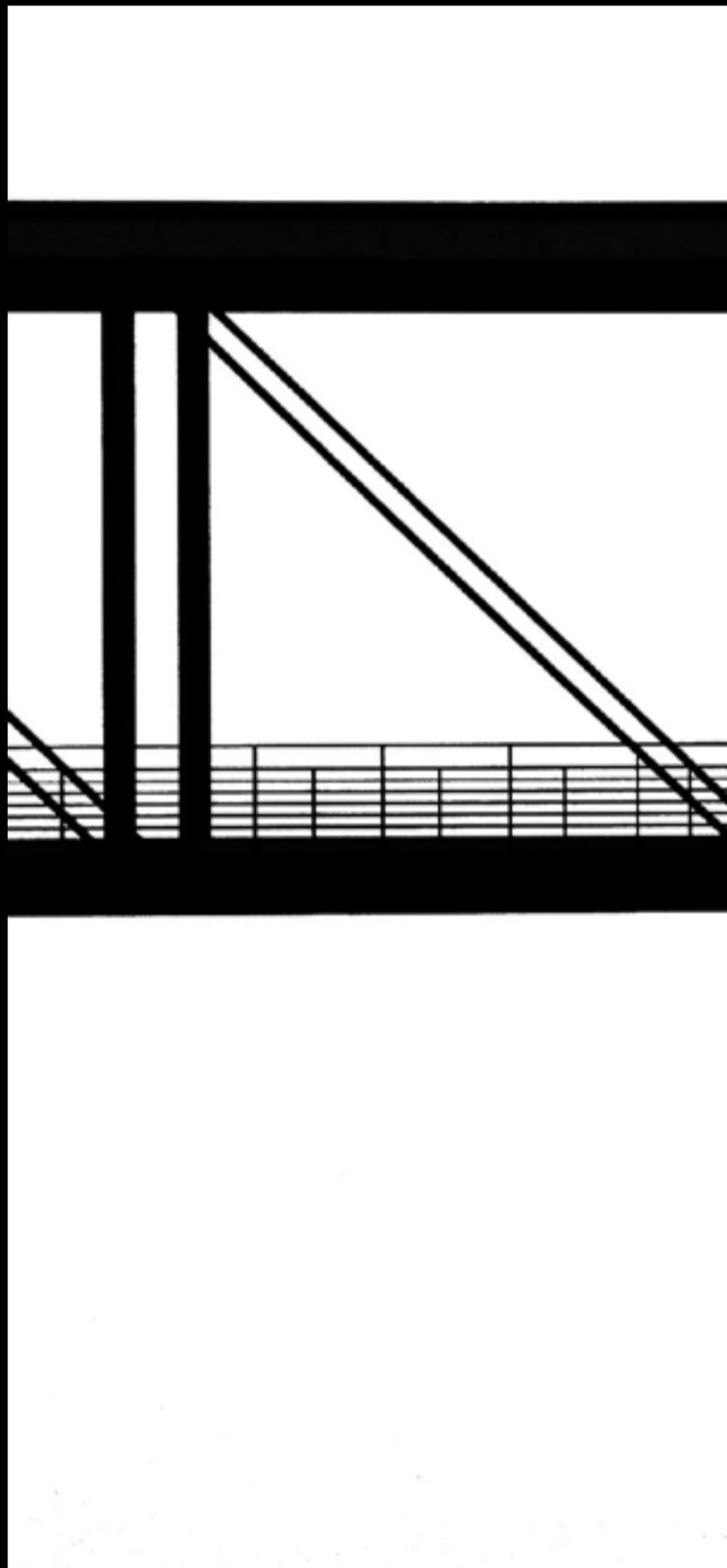
skills are well honed indeed, and may be used as a model for what can be achieved with a little dedication and patience in mastering the ins and outs

Fresh Faces

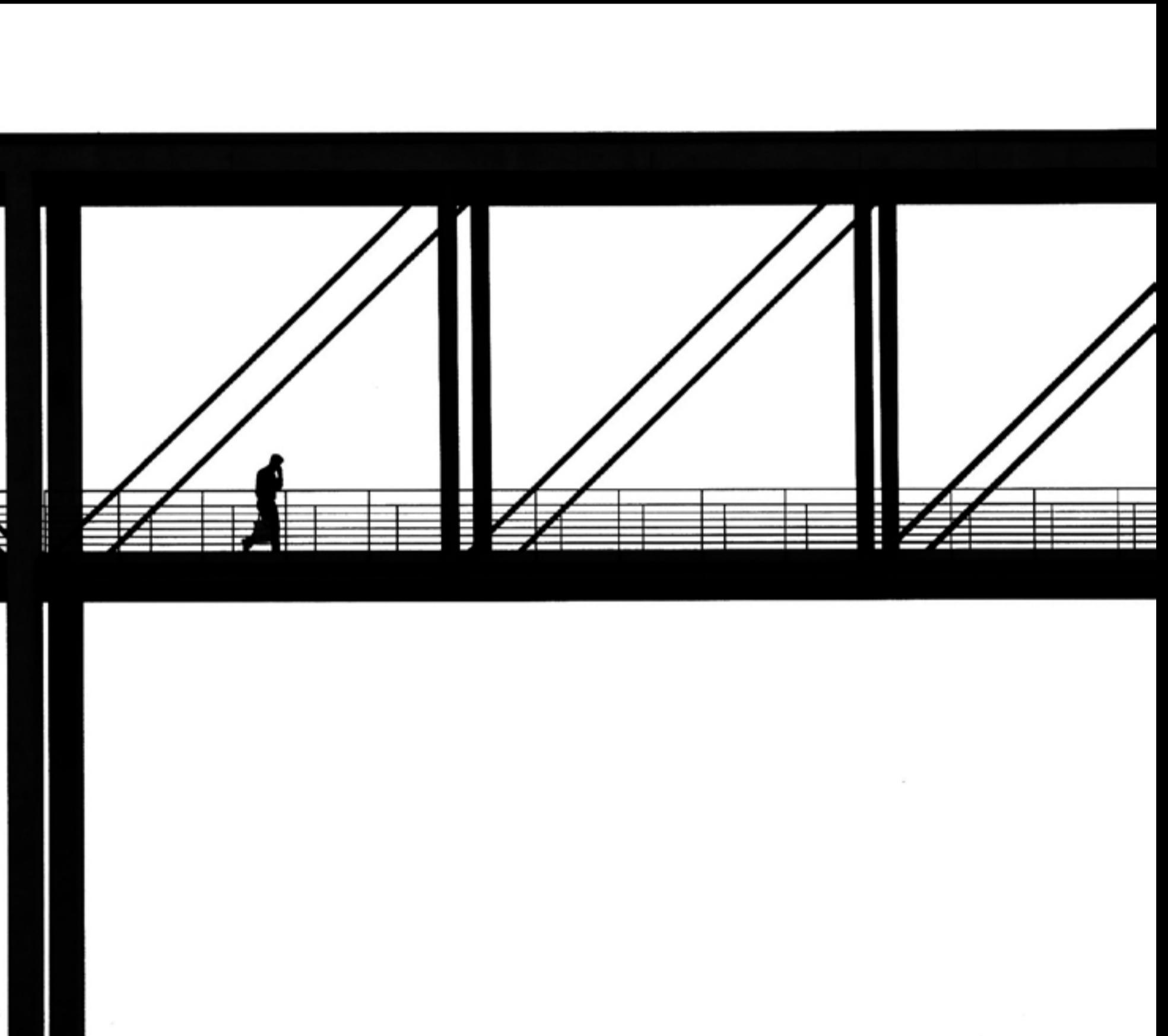


of Photoshop. We were so impressed with Ms. Ban's work, we didn't hesitate in deciding to employ it as the image that graces this issue's cover... Thanks Sarolta!

FRESH FACES



Ton Mestrom



Dutch photographer Ton Mestrom first became intrigued with the art upon receiving his first camera, a Mamiya rangefinder, from his father at the age of 12. It

Fresh Faces



wasn't until his early twenties however that Ton became serious about it. Enrolling in the Belgian Academy of Fine Arts, Mr. Mestrom studied photography for four

Ton Mestrom



years before setting out on his own. Having been featured both in solo and group exhibitions, Ton's work has been seen in various European galleries, and thus we

Fresh Faces



were pleased to be able to include it herein as part of this issue's exploration of black and white — a medium Mr. Mestrom specializes in. When not out shooting on the

Ton Mestrom



street, Ton also works in medical imaging — particularly in the field of GI Endoscopy. We look forward to seeing more of Ton's excellent images in near future!

Digital Darkroom



Demystifying Lab Colour

I'm not sure why every time I convert an image to Lab colour, the opening lyrics from The Monster Mash: "I was working in the lab late one night..." spring to mind; perhaps because of the unearthly possibilities this colour gamut is capable of producing, or perhaps, more likely, because I'm simply weird.

Most are at least passingly familiar with the RGB and Adobe RGB colour spaces (if you're not, we've a terrific primer in issue Volume II), as the former is generally the default on monitors and cameras, while the latter typically requires selecting an option on your body and purchasing a wide gamut monitor in order to realize its full utility. Others may also be used to employing CMYK in their printing endeav-

ours. CMYK makes sense in that its components are the direct opposite of those in RGB. That is, on the colour wheel, cyan is opposite red, magenta to green, and yellow to blue. In print, cyan absorbs red light, magenta green, and so on. RGB uses luminance levels of each colour mixed, while CMYK relies on percentages of ink colours applied.

Lab colour on the other hand, seems to generate some measure of consternation among photographers, leading to a lot of head scratching, shrugging, and ultimately casual dismissal of this extremely useful gamut.

So why are folks confused? Well, people understand mixing primary colours to achieve a desired result; painters have been

doing this for millennia — so, combining red green and blue (RGB) makes sense. However, Lab works a little differently. We're still combining three things, but in a different manner. Let's first examine what the acronym Lab stands for: Lightness, A, and B channels. Well the first one makes some sense, but what are these two arbitrarily named channels, and how do they all work together?

The easiest way to understand A and B is to relate them to something you're probably more familiar with: Tint and Temperature respectively. 'A' channel represents a range of colours from green through magenta; while 'B' includes values spanning blue through yellow. Numerical values for these go from negative 128 through positive 127, with zero as a midpoint. Green and blue are on the negative side, while magenta and yellow are on the positive. Take a look at these sliders in Lightroom or similar and you'll see the similarity, though the Temperature adjustment is calibrated in degrees Kelvin instead.

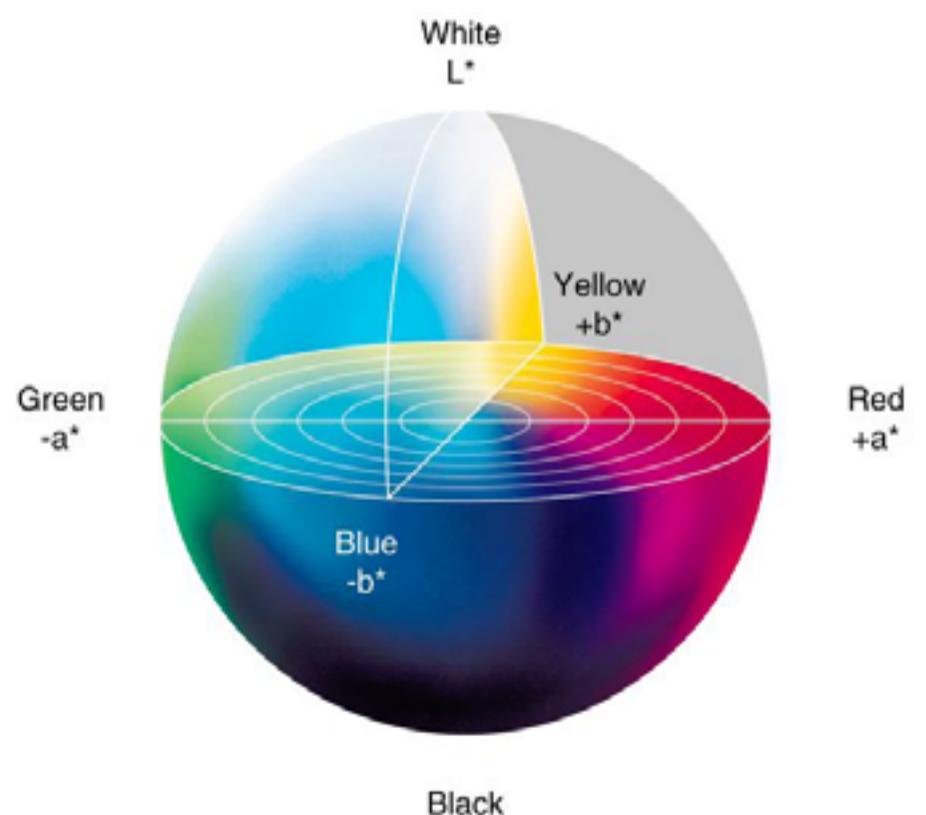
Lightness on the other hand works a little differently than one might expect in that it actually affects the rendered colour much the same as the other two components, and can best be thought of as being responsible for what shade of a particular colour is selected by mixing the other two channels' results. Its values range from zero through one hundred, with zero representing black, and one hundred, diffuse white.

WHAT'S IT GOOD FOR?

Ok, fine... why do I care? Well, for starters, Lab colour is huge in terms of the size

of its gamut; and is indeed the largest available to us when working with our images in Photoshop. This means that we have access to the entire range of colours that the human eye is capable of perceiving — and beyond (imaginary colours, outside the scope of this article). Lab has been designed to closely mimic human perception of colour and differs from the RGB model in that the range of reds greens and blues that we see in nature benefits from their inclusion within this wider palette, while the span between, let's say cobalt and lavender (not official colour designations, but close enough) on the colour wheel gets compressed. Therefore, you are more able to accurately colour match your output to your original perception when you released the shutter.

Developed in 1976 (well, rather refined from a 1931 model), Lab is also designed to be device independent. That means there are no profiles to concern yourself with (beyond standard CIELAB D50 you'll find in Photoshop etc)... Lab is Lab. So, for example when you convert to CMYK for printing,



your image won't undergo significant colour shifts which you might otherwise encounter when converting from RGB or sRGB. This is a huge time saver and one of the reasons why many professionals prefer to work in Lab.

SOUNDS GOOD, WHAT ELSE?

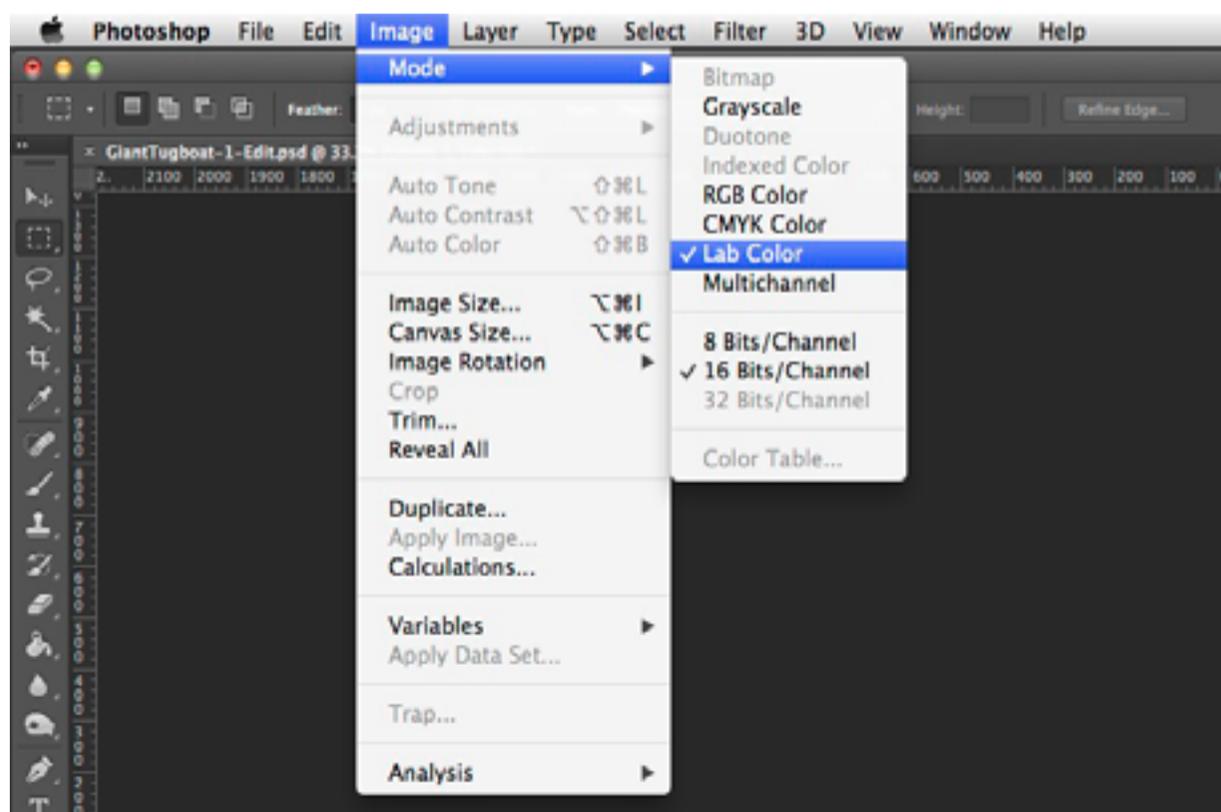
While the above is great, let's get into some practical examples of things you can do with Lab.

First of all, one of the primary advantages of Lab for photographers is the ability to perform sharpening activities without the noise and artifacts normally associated with undertaking the same actions in other colour spaces. As a result, you can take your sharpening pretty far indeed, without having to worry about unintended consequences (beyond producing an over-sharpened image from a taste perspective). There are several ways to approach this task in Lab but we'll cover the easiest, and then a more flexible and non-destructive solution. We'll be working

in Photoshop, so if you're using another image editor (Gimp etc.), you'll have to accept our apologies and transpose our methods to your favourite application for yourself.

Once you've opened your image in Photoshop, convert it to Lab by selecting Image > Mode > Lab Colour. Easy peasy. Now duplicate the background layer by using your preferred method (right click on the layer and select duplicate, drag the layer down to the new layer icon, etc.). Next you'll want to select the Channels tab and highlight the Lightness layer. From the Filters menu, select your desired sharpening option and apply it in whatever amount you would normally be comfortable with. Click on the composite Lab channel (the combination of all three channels) and see your results. Now hit ctrl/cmd-z to undo that and try sharpening it again, but this time around, try seeing just how far you can push things without causing noise and artifacts... pretty cool, right?

Ok, well that worked pretty well, but for a more refined approach, let's take advantage of the non-destructive power inherent in Photoshop's smart objects and filters. First select the layer you wish to sharpen and then 'Convert for Smart Filters' under the 'Filters' menu. Now we'll add a smart filter to the layer: Smart Sharpen (Filters > Sharpen > Smart Sharpen). If you haven't used Smart Sharpen before, and perhaps are used to employing Un-



sharp Mask instead, you'll notice a lot of options that may be unfamiliar to you. However, once you become accustomed to using it, you'll realize the flexibility and power that comes with its utilization is well worth the effort in learning something new. Apply your sharpening settings and wait for the filter to do its magic. Now, in order to duplicate the effect achieved in sharpening only the Lightness layer, select the Blending Options icon located in the lower right hand corner of the filter layer. Now choose 'Luminosity' from the drop down menu, and voila, you've replicated the effect of sharpening only the Lightness layer; however, you have the added bonus of being able to go back and edit your sharpening settings and opacity... all non-destructively. Magic.

PRESENCE

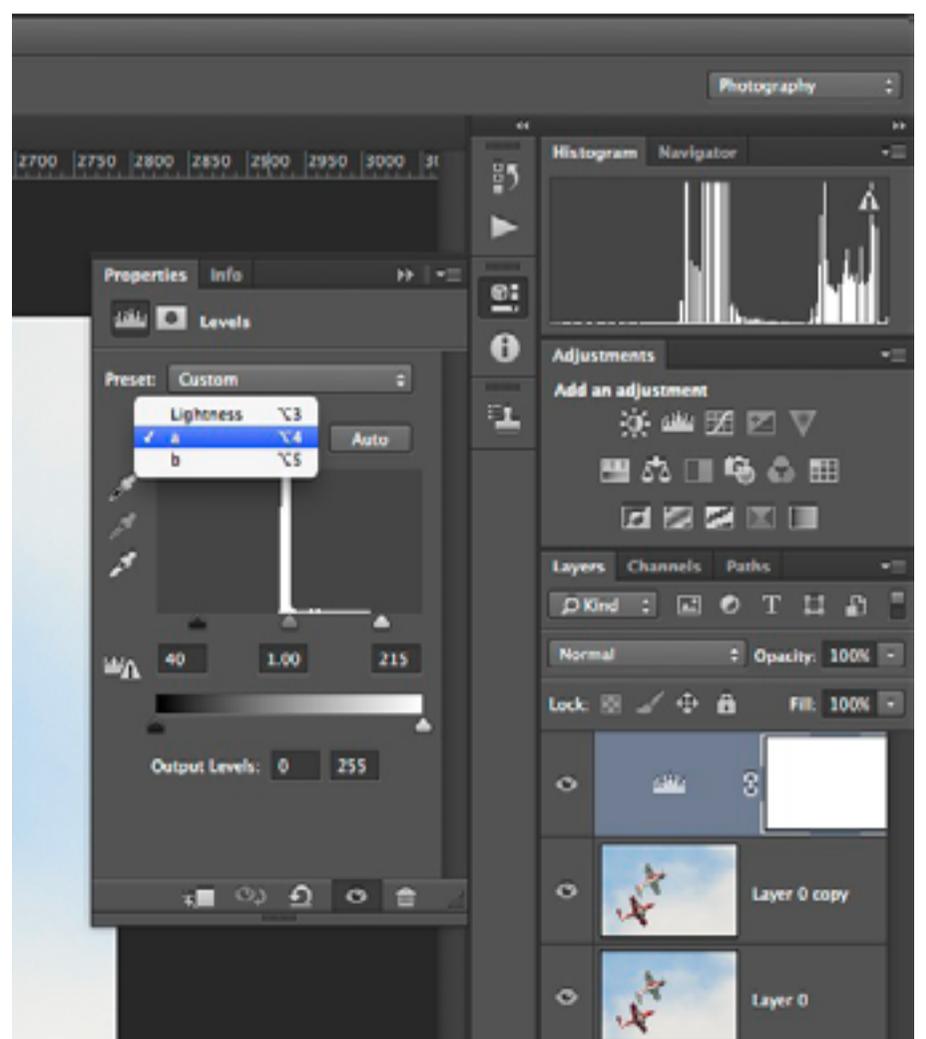
This next technique will really help increase your contrast and make your colours pop! For this example I'm going to use this image of two members from the Snowbirds aerial acrobatic team, taken on their recent visit to Nanaimo. For this shot I was using the only long lens I had available to me at the time (don't ask): the Sigma 50-500mm $f/4-6.3 @ 500\text{mm}$. While the lens definitely sports an impressive focal length, that's really all its got going for it. Contrast, detail, and sharpness are not among its best features... and frankly it might more appropriately be named "The Black Hole" considering the substantial light it requires to achieve blur-free photos at 500mm. That said, while I might not be shooting a hole-in-ones with this lens, at least, under ideal circum-

stances, it can get generally me on the green.

As you can see on the following page, even after initial work undertaken in Lightroom, the colours don't really pop and the contrast leaves something to be desired. So how best to address this?

After converting the image to Lab as above, we are going to add a 'Levels' adjustment layer to your duplicated background. (N.B. you can also get more precise control over this technique using curves, but we'll leave that for your own experimentation). The first thing you'll notice that's different from working in RGB, is that you are not able to work on the master, but are forced to make your levels adjustments to the individual channels... trust us, this is a good thing!

First we'll bring up the contrast by selecting the Lightness channel and dragging the black point and white points nearer the respective edges of the histogram data. Next,



we are going to switch to the 'a' channel. Here we're going to punch things up moving the black and white point values equal distances from their current position. Notice, that although we are indeed in Lab, and channel values are supposed to be from negative 128 through positive 127, here in the Levels adjustment layer, they are represented as being from 0-255. That's ok. Let's move the sliders up and down 40 respectively by clicking inside the numerical display and hitting shift-up arrow four times for the black point, and shift-down arrow four times for the white. We'll leave the centre or gamma slider where it is. Ok so now the values are 40 and 215 for each. Wow... the colour has gone screwy! That's ok, repeat the process exactly (assuming

the colour balance is correct in the first place) in the 'b' channel and we're golden. Look at the difference! Of course it's easy to see how we could also correct colour casts in our photographs at the same time as we tweak punch... all using a single adjustment layer. Amazing!

JUST THE BEGINNING

Of course we've merely scratched the surface of all the cool things you can do with this incredibly versatile colour space. We'll certainly be including more techniques in future issues, so stay tuned! As always, don't be afraid to experiment; you'll be surprised at the beautiful — and sometimes crazy — results that are possible in the Lab.





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a

b

a

*Compose
Yourself.*

$$\frac{a+b}{a} = \frac{a}{b} = \phi \approx 1.61803$$

Alternatives to the 'Rule of Thirds'

In past issues we've explored a variety of composition principles including utilizing negative space, creating visual tension, and of course, the ubiquitous 'rule of thirds'. As framing your subject has as many possibilities as one's imagination allows, moving beyond the rule of thirds would seem child's play; however, some choices are better than others, and fortunately for us, there are additional guides for us to follow.

GOLDEN RATIO

While much has been written about the golden ratio being precisely expressed everywhere in nature, the Fibonacci Sequence etc. (most notably by Dan Brown in *The Da Vinci Code*), that's generally a

bunch of malarkey... lots of things are close, but no cigar. Still, there are certainly tons of examples of its utilization we can point to which well illustrate its aesthetic properties.

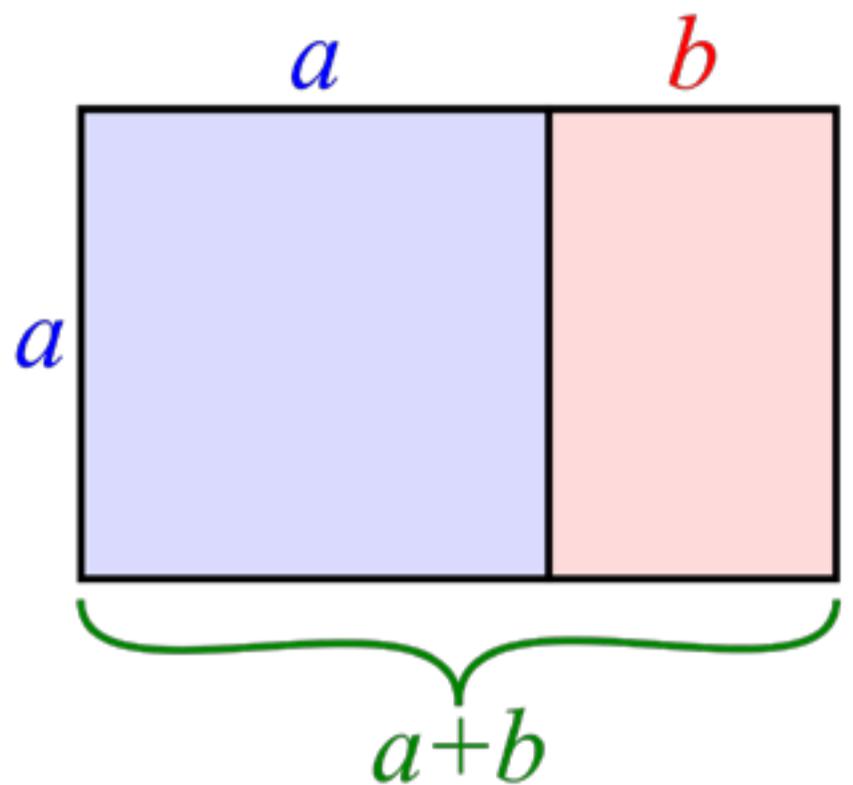
Similar to the rule of thirds (in that the rule of thirds is essentially a simplistic model of it), the golden ratio divides an image into sections wherein important image elements may be aligned to produce aesthetically pleasing compositions. Originally documented by Euclid (325-265 B.C.), and probably in conscious use for over 200 years in advance of that, the golden ratio (also known as the golden mean, golden section etc.), is derived from a mathematical equation which essentially says for example, that when you take

a rectangle, create a square within it using the length of one of the rectangle's sides for its measure, and the remaining rectangle has the same ratio of length to width as the original rectangle, you have created a shape conforming to the golden ratio. Calculated at 1.618 and represented by the Greek letter Phi, this aspect has been used extensively by artists over the centuries to great effect.

Speaking of Da Vinci, take a look at all the instances of the golden ratio's observances in 'The Last Supper'. Clearly the artist was well acquainted with its aesthetic appeal, and generously applied the ratio's properties to his work.

THE GOLDEN SPIRAL

Directly derived from the golden ratio, the golden spiral is a logarithmic curve which uses its parent ratio to determine its increasing width every quarter turn. Um, who cares? Unfortunately, many images don't lend themselves well to formal layout via the intersection of straight

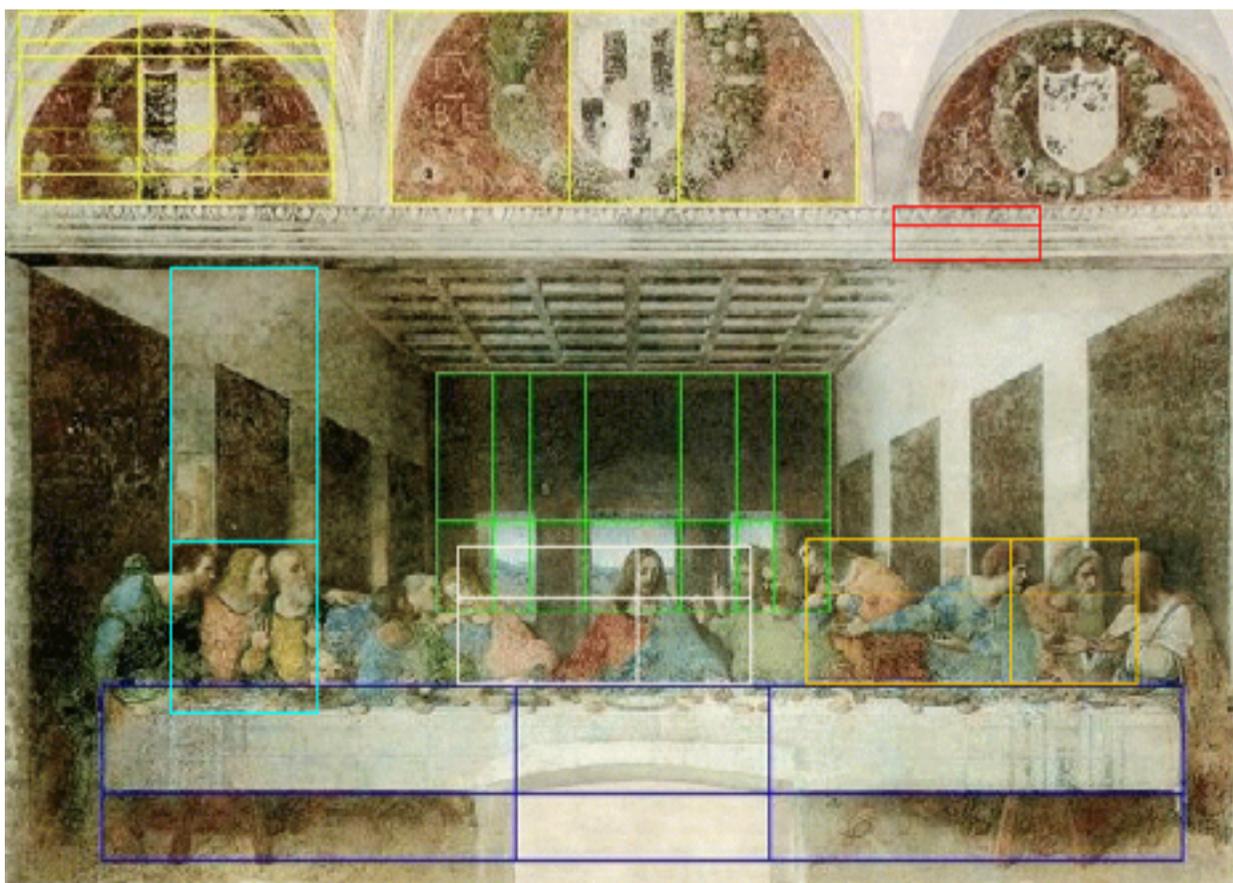


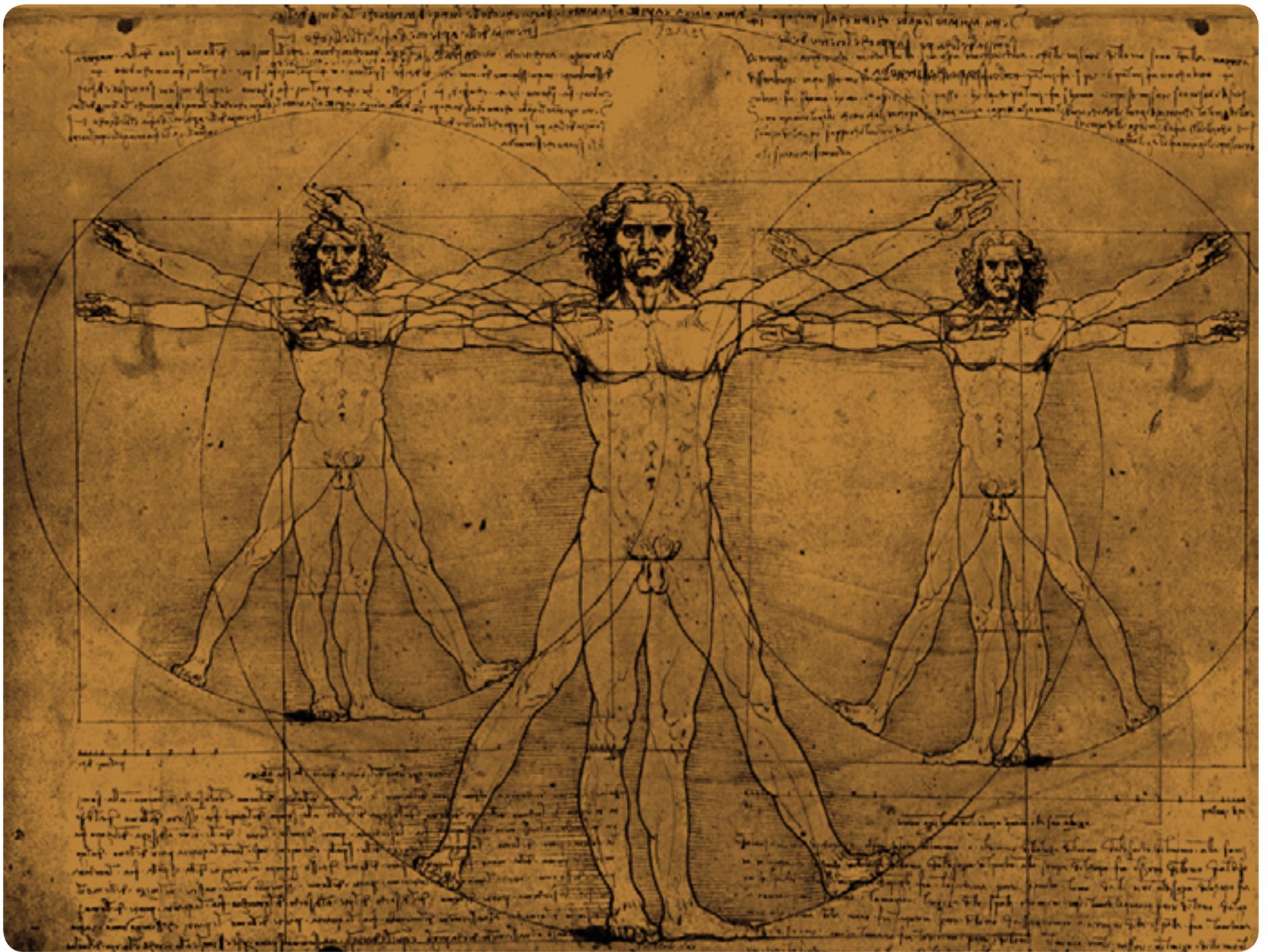
lines — particularly organic shapes (think flowers, nautilus shells, fiddleheads etc.), so the spiral allows you to still utilize its parent golden ratio, simply expressed as a curve. Other incarnations of the golden ratio include the golden triangle, which too may be used to guide our artistic vision.

CENTRE PLACEMENT

If you are to believe the vast majority of tutorials on photographic composition, you'd be certain that placing the subject in the

centre of the frame is anathema. While generally it is true that most subjects will aesthetically benefit from an off-centre composition, there are many occasions where a centre placement is exactly what's called for. For example, instances wherein you wish to emphasize symmetry (often found in architectural work), it is frequently a great idea





See how many examples of the golden ratio you can find!

select the 'Crop Guide Overlay' item. From here you can see many options including Grid, Thirds, Golden Ratio, Golden Spiral, Diagonal, and Aspect Ratios. You can cycle through them by hitting the 'O' shortcut when you have the Crop tool selected. Further, you can choose from which options you normally like to include within that cycle by selecting the 'Choose Overlays to Cycle' option from that same menu.

This makes life considerably easier and exposes you to compositional possibilities you mightn't have thought about while shooting the image in the first place. You'll certainly come to discover that many a ho-hum image can be dramatically improved by judicious

use of the crop tool (see our Creative Cropping guide in Volume I for more on this!).

So while you needn't feel constrained by the rule of thirds, or even the other options presented above, knowing the 'rules' (and when to break them) definitely enables the photographer to improve their craft, resulting in images that transcend the snapshot, entering the world as creations your audience can embrace as art.

MASTERING MASTERING MASTERING

BLACK & WHITE



The world around us is resplendent in brilliant colour, tantalizing our eyes with sumptuous sights, just begging to be captured by the worthy photographer. Certainly we may understand that due to the historical limits of technology, at one time black and white was all that was available; but given the current state of affairs, why would anyone wish to dispense with nature's lush palette, in favour of a monochromatic rendering of the world?

SUBTLETY IS SUBLIME

The problem with colour, is that it overwhelms other valuable aspects of an image. Sometimes it's the boorish jock, shouting in a hushed library, it's the drunken socialite dispensing vitriol at a polite soiree, it's the mobile phone ringing in church

as your daughter exchanges her vows... it certainly gets your attention, but is not the most important part of the scene.

An example of the extreme power of colour to dominate, would be its use in advertising. We're certain you've seen ads that use a predominately black and white image, yet employ a single small area of colour — which is immediately what the eye is drawn to. This is no accident; our eyes are designed to look for differences in their surroundings from an evolutionary perspective, as described in our article on visual tension in volume 2 of the magazine. However, when colour information is removed from a scene, our eyes act in exactly the same way, but reveal more subtle nuances that may indeed be more visually interesting than the distracting colour overlay.

SUBJECT MATTERS?

The secret to great black and white photography is first, knowing what to shoot. You can't just take a good colour photo, digitally convert it to greyscale, and call it a day... you have to shoot with black and white in mind. Certainly you may on occasion have a pleasant surprise upon attempting a black and white rendering of an existing shot, revealing hidden brilliance in what was an otherwise unremarkable colour image. However, excellence in black and white photography is not happenstance.

When colour is removed, shape and line become significantly more important. You need to train your eye to look for interesting combinations of shape exclusive of their overall context in the world. A photographer may for example wish to shoot an entire building when capturing in colour, while the black and white artist might see fascinating shapes within the contours of that same building which are best revealed in closeup. Repeating forms and patterns are also highly beneficial to monochromatic imagery, as they add balance and unity to a photograph.

The photographer needs to pay more attention to how these shapes are arrayed in-frame than they necessarily might in a colour image, as these details predominate. The implied line in how these objects are captured can also suggest motion where none exists, and provide additional interest to your subject matter. Further, texture is a key element to black and white photography. Take this famous shot of Er-

nest Hemingway by master photographer Yousuf Karsh for example: while it may well have worked in colour, the powerful textures in his face and sweater would be greatly diminished in importance, yielding a significantly less dramatic photograph.

CONTRAST IS CRUCIAL

Given you are working with a single tone, the dynamic range expressed within an image gains significantly more prominence. Look for scenes that have a high degree of contrast within them in order to take advantage of this powerful compositional element when capturing an image. Though certainly you want to preserve as much detail as you can, black and white photography is significantly more forgiving in terms of blowing out highlights and blocking shadows. Often photographers intentionally allow highlights in the sky for example



Ernest Hemmingway - Yousuf Karsh 1957



to be blown in favour of a more dramatic image by way of increased contrast ratio. Depending on the subject matter, your shadows can often be more crucial than the highlights in terms of what you wish to preserve, with smooth tonal gradation in your darks to mids being the goal. This is of course often difficult to achieve, as your camera's sensor records significantly less information at the lower end of the histogram than in its higher regions. As a result, photographers may wish to overexpose the highlights on capture, in order to shift the shadows to the right in the histogram... thereafter adjusting them back left in post, where they will contain more detail information as a result of the initial exposure decision.

DARKROOM DECISIONS

So after taking the above into consideration, you've activated the shutter release and it's time to send it to the printer, right? Certainly not. Even in the bad old days of messy chemicals and rosy illumination, great black and white prints required significant darkroom attention beyond the relatively straightforward development process. Take Ansel Adams for example, probably the best known landscape photographer of all time who worked exclusively in black and white. He'd spend countless hours in the darkroom dodging this, burning that... making sure every last detail was up to his demanding personal standards. The digital process, while less messy, can often be no less time consuming or exacting.

First off, in advance of your decision to process the image, you'll want the widest possible latitude in your available options post — so shoot in RAW, in colour, and use the widest gamut available to you (normally Adobe RGB). Many cameras offer black and white modes; however, you'll have a lot more flexibility by utilizing the power of your computer and RAW processor than your camera could reasonably expect to afford in terms of black and white conversion.

Once your image has been imported into Lightroom, Aperture, or whichever processor best suits your needs, you'll want to start from a good base and work from there. I often select one of the black and white presets that ship with Lightroom, and then tweak the result to my satisfaction as an initial pass at the image. I'll adjust the exposure to obtain the best results in order to highlight that which I am trying to convey, bump up the clarity, apply a fairly healthy manual contrast curve, adjust the HSL sliders to my liking, apply some basic sharpening, spot correction... and then it's time

to make the decision on whether it's worthy of sending to the secondary processor!

Should I be pleased with my initial result, and determine the image is worth spending significant time on, I'll elect to do one of two things: send the adjusted photo to Photoshop, or lately, open the original in onOne Software's Perfect B&W for the royal treatment.

What digital magic happens there you ask? Well we're glad you did, as we are reviewing Perfect B&W within the pages of this very issue! Read on...

FINALLY

Anyone can shoot in black and white, but mastering the craft requires the photographer to change the way in which they normally perceive the world around them: paying more attention to detail, contrast, and nuance, and gaining an appreciation of the beauty of geometry and lines of implied motion. This perspective generally isn't innate; so get out there and practice — you'll have fun, and discover a whole new universe just waiting to be captured!



PHOTOPRENEUR

Steve Hollinger

Today we're joined by Steve Hollinger, Boston based artist and inventor of, among other things, the throwable ball-shaped camera system dubbed the Squito. Thanks for joining us today Steve; maybe you can start us off by telling us how you became and inventor in the first place.

Steve: Thanks for having me. Well, I come from a family of artists; my father was a painter, my mother an art teacher. So I had kind of a creative upbringing, and went through school looking for engineering training. I went into high tech out of college; worked for a number of large companies; and then about 25 years ago went off on my own as an inventor to begin a career developing software and consumer products ranging from large format printing software in the late 80's and early 90's through creating products for kayakers, and a wide variety of other products. So a pretty mixed career.

As far as photography goes, I have a lot of background in colour imaging — I worked at Wang Laboratories back in the 80's in

their imaging department, and worked at a company called Telex on colour printing. Then I developed a product called 'PosterWorks', which was the first desktop large-format production software back in the day of Quark Express and Pagemaker. So back then, 24 bit colour and colour separation technology was just budding on the Macintosh. My product was the first to allow people to do high quality production of billboards without a real loss of quality, up to 250,000 square feet. I had a patent filed for that product, which would allow a photograph to be enlarged to these extremely large sizes again without a loss of quality. The way that worked was the software is that for example an eyelash is high frequency in a person's face, and a cheek is low frequency... it's smooth. So the software would actually vectorize the high frequency parts of an image and then interpolate the low frequency parts normally as you would in Photoshop...

DP: So, as a raster graphic.

Steve: That's right. And then later on after it had scaled up the image, with the interpolation



of the low frequency data, it would carve the high frequency data back in. So it was a pretty cool patent, and a great product.

DP: It sounds like you did quite well with it also. So, you're also an artist... would you say you're an artist or an inventor first? Or would you describe yourself differently?

Steve: Well, it's hard because I actually do both. I work as a sculptor, and show my work in galleries. So I do work as an artist and enjoy that life also. I don't feel I'm one or the other. I've managed to kind of find time to make sculpture and also to live a life as an inventor. Usually I draw a fairly clear distinction between things I'm working on that have a commercial intention — and generally speaking, when it has a commercial intention, when it's an invention that I want to market, I look at it a little differently and see it as something where for example I'm willing to make more compromises based on what customers or the market wants. With art work generally, you intention is not at all related to commerce; and it comes from somewhere deeper inside. As an artist you're usually less compromising, so I feel like my art work is a completely separate part, and each side informs the other.

DP: So do you spend an equal amount of time on the inventions versus the artistic work... or what percentage would you say you do?

Steve: That's a good question. I think over the years it's varied. For a while I was doing more sculpture and really trying to look at how to show work and work closely with galleries, but then realized that my

business which I had developed for quite a while was kind of getting somewhat anemic, and I was worried that I hadn't concentrated on the business side. So I scaled back my art work and concentrated on the business for a few years, and that's kind of where I've been at for I think the last three or four years — working really hard on the business side. Now I have two shows coming up this year though, and so I'm looking forward to getting back in the studio more.

DP: Well that's great! Now is it the case that your initial commercial success afforded you the ability to pursue your, maybe not as commercially viable artistic endeavours, and that's why you let the business side of things kind of slip a bit?

Steve: I think that there's some of that. It's fair to say that as an artist it's difficult to actually make a living and live in an urban centre, primarily because in the art world generally, unless you're really into the marketing angle, there's either the cream of the crop — the top 5% of artists, or maybe the top 1% — and then there's everyone else... most are struggling. Most of my friends and I are working really, really hard. So it's tough; there's a tension always between wanting more studio time, and also wanting to do some of the things like paying the mortgage or doing the normal things in life. As an artist you're driven; you don't want to do anything else, but you also have to make some compromises along the way to try to put your financial house in order. So I do a lot of commercial stuff to deal with that side of things so I don't have to compromise on the other side.



DP: I see... that situation certainly exists in the photographic world as well.

Steve: It sure does.

DP: So, speaking of the photographic world, maybe you can tell us a little bit about the Squito... what was the genesis of that product idea?

Steve: Sure. I've been working on Squito for quite some time. The concept has been evolving probably in earnest for about 5 years. I filed the first couple of patents on it back in 2009. When you're an inventor you actually have a lot of irons in the fire; and usually you're working on one that's in the market, and maybe you have a bunch that aren't that you are working on separately.

So I've been working on this thing for a while now, and basically the concept is that if you throw a camera in the air — and es-

pecially if it's spinning around — it has an incredible view of the universe. It's actually more exciting than you might even imagine; because, when you see the data that comes off a camera that's been thrown in the air, it's startling to actually discover what you're looking at. First of all, in the photography world right now, people think of photography as 2D, and maybe they think of 3D panorama or 3D stereo... but the reality of what's out there is different. The reality is what your eyes see and what happens when you turn your head around: it's neither a spherical panorama, or a 2D stereo image.

So the data that's available is massive and really interesting... and the question is: how do you represent that? How do you capture it? How do you provide it to a user in a really interesting and useful way? So these are all problems that are really fun to solve and work on.

If you think about what your eye is seeing, that's not exactly what you're representing when you're handed a JPG, or TIFF, or a movie file. There's no format out there that actually represents what you see. So one of the problems when you have the idea of throwing the camera in the air and trying to capture data that's just available, it's a whole new way of thinking. Anyway, to simplify, the Squito's basic premise is that you can make a camera that can capture spherical panoramas by throwing a ball in the air. It can have a number of cameras embedded in the housing, or if it's spinning fast enough, it can capture all the data using a minimum number of cameras.

DP: So, 'Squito'... where did the name derive from?

Steve: You know really I like coming up with trade names for these products. I started working on the housing for the camera, and the early versions looked a little like a trilobite. So I was looking for names that were like that: Trilo etc. Then, as the housing evolved a little further, it looked a little more insect-like when you threw it in the air... so I thought about Mosquito, and then Squito just came from that. Also, the nice thing about the name Squito is that it's kind of playful, but also for more serious applications, it still has meaning. It's not one or the other.

DP: So, how does it work? Can you explain the order of events that occurs once the camera is thrown?

Steve: Well I can't exactly explain the order of events based on the interface or anything



like that because it's not a real product as yet; it's in development. The product as it evolves could be a number of things: there could be an application for recreation and there could be a version of Squito for, let's say, search and rescue or something more serious. So at the stage you're developing an interface, I think you're kind of much further along the [product development] way than I am. I'm working on the control software, the logic for how it knows where it is in the trajectory and the basic camera triggering... some of the logic involved with how it's going to be working with stitching of multiple images from multiple cameras... so there's a lot of work that still needs to be done. It's pretty early.

DP: So is it going to be triggered by an accelerometer when you throw it up, or or sometime device? Do you have that nailed down yet?

Steve: Well I have the prototypes that use a triple axis accelerometer, a triple axis gyroscope, and a triple axis magnetometer. The magnetometer is actually there for doing some correction or error in the other micro-components. So basically it knows where it is in space, it knows the direction it's looking at.

The patents are really the basis of what I've been thinking about, and they describe a number of different opportunities: you can either trigger cameras based on knowing what the camera's looking at, or you could capture everything and then extract from what you've captured. In other words you have a standard video camera embedded in the Squito, and then you are actually using the accelerometers and gyros to tell you what to extract from the capture information later. On top of that you have the ability to rotate or transform the image data from one orientation or perspective to another, to supply it to the user in a useful form. So, for example, a ball thrown in the air, you want to supply the data back to the user so that the earth is on the bottom and the sky is on the top; so the ball can use the sensors to figure out what orientation it should rotate the data to.

So there's a lot of uses for these components in the Squito, and each application will have whatever set it needs to get the job done.

DP: So what applications do you see it having?

Steve: Well, you know, it's funny because every day I hear more applications that I didn't think of. So, I think I probably know a tiny fraction of applications that it will actually end up being used for. The ones I've been

thinking of are really recreation, just for having fun, a low cost ball hopefully — let's say \$99-\$200 — and then again a low cost ball, believe it or not, for search and rescue.

For more serious applications I'd like to get a low cost ball out there, because I think there are situations where it may be difficult in some cases to get the ball back. For example if you're a firefighter, you might want be willing to throw away \$200 to save somebody. So I envision fire departments having a sack full of cameras that they can throw into a burning building and then try to get people out if there's someone in there, and [otherwise] save a firefighter's life by not having them enter the building.

So, obviously there are people who are interested in military applications, and tactical applications... things like that. I don't have much experience in that world, so I probably will work with people who better understand what the needs are for that space. Generally my interest is in a consumer product, a high-end professional product, and a low to mid-range cost search and rescue product... those would be the three I am concentrating on.

The applications that are intriguing are architecture: fly-throughs and overflights of buildings for real estate. You have even have people like storm chasers asking me to make balls that they can throw into a storm... there's a pretty wide range. There's a lot of mapping stuff out there also. Let's say people are making a 3D movie, and you are actually creating 3D simulations or CGI versions of creatures or whatever, and you want to



map the specular reflections of an environment to that creature. It's really hard to get 3D spherical panoramic data to map specular reflections onto a computer generated object. So the Squito could help with that.

DP: So, on the prototype, how many cameras are actually inside, and what are their characteristics?

Steve: The actual Squito that I've shown publicly has three cameras. I haven't published specs for those three cameras at this point. I'm not really willing to disclose publicly what I'm doing since we haven't nailed down the application or the actual components we're going to go with.

DP: Ok, well in terms of interfaces, how do you get your images back out?

Steve: Well, the intention is to have wireless transmission. However, because of the cost-prohibitive nature of wireless, there may be a low cost Squito where you'd have access to some kind of port. So like a GoPro, you'd plug it in through USB. You know, wifi is fairly short range, so wireless, if it's going to be in there, has to be workable so it makes sense for a longer range than normal use of wifi.

Again, these are decisions based on each particular application. If I sound a little wishy-washy it's only because, you know, I've done a really good job nailing down the research, the history, intellectual property — the patenting part of it, and also generating prototypes that are workable enough to prove that I am onto something, but we're not at a stage close to going into production with this. I still probably have to go through a round of

financing or finding a camera company to work with to actually get it into production.

DP: On the video of your prototype in operation you describe the unit interfacing with others... what's the application of this type of networking?

Steve: With other Squitos?

DP: Yes, other units of the same variety...

Steve: Well, that is a really exciting area. In fact, I have a feeling, if it hasn't been done already (and I'm not sure; it probably has), but as far as these kinds of balls go that you throw in the air, there's a lot of exciting stuff that they can do when they start communicating with each other.

I mentioned earlier that when you look through your eyes, you see a world that you actually don't represent or capture when you use a camera. When you start using multiple cameras to capture a scene, the data becomes really bizarre and interesting. For example, you could throw one ball on one side of a motorcycle and one on the other side... and now you have both sides of the motorcycle available for you to pan from one ball's camera to the other smoothly through space, and represent all sides of an object. That's pretty interesting. You could throw 50 cameras into a room; map the room; map all sides of everything in the room; and then have some way of interacting with that space.

I'm sure I'm not the only one working in this area. Technically it's called SLAM, which is simultaneous localization and mapping. There are people working in this

area for cameras that are on tripods and maybe even on helicopter drones. So I think there's a lot of technology converging here; but I am probably the only one working on it with throwable camera technology.

DP: Now in the area of search and rescue, would you say your primary advantage over drones would be the cost factor?

Steve: I think I have a significant advantage over drones way beyond cost, but that's a really big one. Cost is going to be the biggest one. All things considered, when I finish this thing, we're going to be able to produce cameras at pretty low cost — even if let's say it has one camera in it, and just produces enough data while it's being thrown somewhere to provide something back. If you imagine a bucket full of balls, a bucket full of

marbles that have cameras in them, you can get the price down to where it's really cheap.

Yeah, price is a big issue; but the other advantage of a throwable camera over a drone is first of all, let's say you want to go through a forest, and you have big evergreen trees... it's not easy to be managing a flight of a helicopter, no matter how big it is — even if it's insect sized — through something that dense, something where you have to deal with really complicated interferences. With the ball, you don't have to worry about that at all.

I talked to a guy earlier today about this, because he's dealing with drones, and the amount of legislation that's coming down the 'pike to deal with photography from drones is substantial. Anything that self-sustains flight is considered a drone... and so anything that



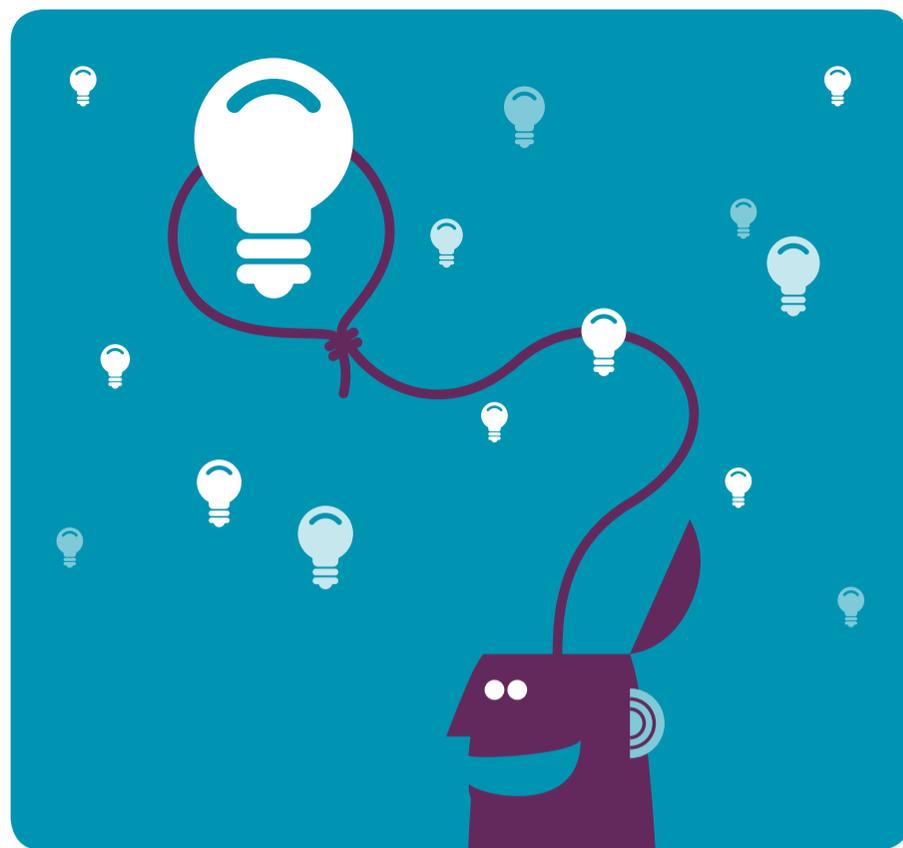
has a motor that propels it is going to be regulated. I don't have to worry about that regulation, at least as far as I can tell. The throwable camera isn't self-sustaining [in flight], so it's basically just like any other camera.

DP: Ok, so back to your prototype, we know it's ruggedized, but what kind of stresses can it endure? For instance is it waterproof?

Steve: Good questions. Well, the prototypes I've made so far, and again, these are kind of final design questions, so obviously a housing can be made that is waterproof. I've made multiple housings and one is close to waterproof—most are not. Again these are prototypes, not final design, so will the final be waterproof? I would suppose it's likely. Or you could have something like the GoPro, where you have an option for a waterproof casing.

With cameras now we can have 100% solid state components that are impact resistant; and I'm trying to nail that piece down: what components would not be able to sustain high G's... even from a baseball bat. So I would like to say to you it's doable, and I think I'm going to try to get to where you could hit a camera with a baseball bat, but I haven't done that yet.

I have got specs on each of the components I am using, and they each can sustain many Gs of force, so for a bouncing ball, not a problem. It's surprising if you read the specs for these gyros and accelerometers what they can take though... it seems to me that they can probably handle being smacked by a baseball bat. They just need to be enclosed in a casing where you're



not breaking the solder leads or damaging the chip; but I think they can handle it.

DP: Well that'll be really interesting to see where that goes.

Steve: These are really fun problems to solve I think, aren't they?

DP: Definitely! So you mentioned you are a programmer and you worked at some large companies... did you have a background in electronics before you started this project?

Steve: No I didn't, and I still don't actually. I am a kind of inventor when it comes to logic hardware, I usually do experiment until I either get something working, or it smokes. So basically, I am not an electrical engineer. I have a strong software background, and I've retained those skills, so I think I'm still a pretty good programmer; but I depend on other people to help me with the logic. So I'm weak in that area, but I have picked it up. For example for prototyping I did a lot of the Arduino [microprocessor] programming, and I'm moving now to checking out

some of these more hobbyist technologies like Raspberry Pi [credit card sized computer running Linux] and things like that.

So I did all the early work programming my own boards and doing all the soldering and stuff to get all the IMU [inertial measurement unit] stuff working — the gyros and accelerometers — I did myself. Anyone can do that right now. You could go right now and buy off-the-shelf gyroscopes and accelerometers for a robot drone, do the soldering with maybe a day of practice, and have it working within, if you do basic programming, a couple of weeks. A lot of it is available through open source, and the learning curve on this stuff is really fast and easy. It's surprising!

DP: Well maybe you've just inspired people that'll be reading this content and will go out and try some of that themselves.

Steve: Well sure. I'll give you a couple of tips. DIYDrones.com has an amazing website for people in this community of either photography or just hobbyist drone work. There's a lot of open source ideas there and it's really a great sharing community.

Then, for any inventors out there, a great resource for me has been mfg.com. That site is really cool, because if you have any idea that you want to make something, but you don't know how to go about it, you could even make a drawing in Adobe Illustrator or Photoshop, and you throw it up there on that website, and if it's reasonably sophisticated enough so that people can understand what the measurements are and so on, they'll bid on that job around

the world. It's always competitive, and it's just amazing. So that's an opportunity for inventors to just do their own thing.

DP: Well I'm certain that's going to be intriguing for a lot of our readers actually. Now, I'm sure you have a lot of product ideas swimming around in your brain; what's your criteria for pursuing one?

Steve: You ask good questions. I have a lot of ideas I wish I was doing right now. So, I feel a little frustrated. I think that that frustration is part of the game and what's really kind of funny is, the [portrayal of the] life of the inventor is probably a lot more romantic than actual reality. It's a really tough job.

For example, one of my inventions is a kayak light. I think right now it's either the top selling or second to the top selling kayak light on the market. It's patent pending and it's got a great way of attaching itself to a kayak. It's available on Amazon, and is pretty well known. I manufacture that myself — I get the parts from around the world and assemble it, and because the sales are still ramping up, I make it myself. So I dedicate a day a week to making kayak lights or making parts for kayakers and boaters. So I'm still here making kayak lights that are starting to sell at a rate that I'm almost becoming a little angry when they sell! It's kind of hard to say that, but...

DP: Because it's diverting you from other projects.

Steve: It is, and it's hard for me to move that product to the next level, which is finding someone else to make it. So I actually have to move that product to an assembly

company which is a hard step because one of the things people love about that kayak light is the quality control is top notch.

DP: Well that's a happy problem to have I suppose...

Steve: Well, it's got it's plusses and minuses, but it's a little frustrating.

DP: Yeah, well I can appreciate how that might be the case. So you're talking about how it is tough to be an inventor, what kind of person do you think it takes to become one, and would you recommend others pursue this path?

Steve: Um, I'm a little scared to recommend it. I once said to a guy like twenty years ago that I recommended it, and he told me the next day he had quit his job. So, my heart

sunk because I'd just told this guy it was a great job and he'd quit his. I don't want to suggest to people that it's an easy job; I think more likely, if it's in your blood to be your own boss and do your own thing, it's hard to do something else. It becomes almost like you don't see any path in another direction.

I do encourage people though generally to follow their dreams; I would just say it's not easy. It's like when you have a kid, a significant portion of your life is dedicated to that, and that's what it is. It is an occupation that really is consuming.

DP: Now, we've noticed that some of your inventions other than the Squito have photographic applications, like the kayak mast for instance. Are you a photographer yourself?



Steve's best selling Kayalite

Steve: I am friends with many, many commercial and fine art photographers, and I know enough about how great people are to never put myself in their camp. So, the one thing I would say is, yes, I love photography and I've been working on high tech photography projects for 20+ years... I still am not a great photographer, comparing myself to people that I am friends with that are in that field. So even though I love the technology and learning about cameras, I'm more of an amateur.

DP: Ok, so you're friends with a lot of high-end photographers; does your interaction with them inform your inventive process as far as your photography related products go?

Steve: Absolutely. I get a lot of my understanding of what their needs are from their experiences. Boston is a great town — it's tough to make a living here as a photographer, but it's a great town for photographers, and we have a fairly strong commercial photography community. Also, my neighbourhood of Fort Point in Boston is one of the largest arts communities in New England. We have a lot of fine arts photographers here. So to answer your question, a lot of my ideas come from this kind of creative energy which exists here.

DP: Well that's great to hear. So, when can we expect to see the commercialization of your prototype? Do you have any kind of timeline in mind?

Steve: I think that the next step for me is probably assembling a team of people who are more capable at some aspects of this thing than I am. Because I have to get to the next

level, it's probably going to involve a round of financing that's going to require some more business oriented work. So it's going to be a while. It's one thing to have a prototype and working software, it's another to actually make decisions about what cameras to incorporate, what logic and what technology to go with. These are fairly lengthy steps.

DP: Anything else that we can expect to see coming from you that you can share with our readers... different projects you're working on?

Steve: Well there's a related project called the Darkball that's going to be similar to the Squito but operating at night and in the dark. So that's kind of an exciting area also.

So the convergence of technologies I was talking about earlier includes high speed cameras, which we'll probably be seeing a lot more of in the future. The price is coming down in high speed photography which is really, really exciting.

As you have cameras that are capable of in normal lighting conditions taking very high speed pictures, it makes the throwable camera that much more viable. Well the same thing goes for infrared and thermal imaging. The ability for example for a firefighter to throw a camera into a smoky room and receive an image of what's in the room — seeing through the smoke — is pretty exciting.

DP: So are you looking at obtaining financing for both products concurrently or is that a separate thing entirely?

Steve: I think it will probably be concurrent

because they both share a lot of the technology, the main differences being just the imaging sensor. So a lot of the internal workings of, for example, the rotation or stitching of an image, that stuff is all shared. There's definitely demand and excitement in both markets. I've known about this for a few years now, but I've kind of kept a low profile. It's been pretty obvious that there's a strong market for it.

DP: Excellent. I guess the housing would be of a different grade from the recreational model.

Steve: Yes, the housing would be different, it's looks, how you hold it, how you throw it, are all going to be different. In fact, more recently I've been moving toward for some of these markets, non-spherical models. That's also an interesting thing to think about: the aerodynamics of non-spherical objects.

I worked for a while inventing a wide variety of umbrellas, believe it or not. For aerodynamic conditions testing I even went to the MIT wind tunnel with some of my proto-

types. What I learned a lot about is how you can move things through the air. For recreation it's one thing, you probably just want to throw a ball... but a ball is not especially aerodynamic. It's considered a blessed body shape which generates a vacuum behind it, or let's say a low pressure area behind it.

You can imagine there are shapes faster than a ball that you can throw with your hand. That doesn't mean a person for recreation wants to be playing catch with a friend at 95mph. But you can imagine other applications where it would be nice to throw an object that reaches a very high velocity. So that's another area I'm looking at: alternate shapes for the housings.

DP: That's fascinating. Thanks so much for your time and we certainly look forward to getting our hands on a Squito once they are available!

Steve: Well you are among the first to contact me and you'll be among the first that I contact when it's available — so thanks for enquiring!



SQUITO™
C A M E R A B A L L

Tap logo for Squito video!



Perfect Black and White?

There are certainly lots of ways to convert your image to black and white, from in-camera renderings, through RAW processor presets, to a wide variety of options available to photographers within Photoshop. If you want the best result in the shortest amount of time however, you're generally better off employing an application specifically engineered for the task: enter onOne Software's Perfect B&W.

For starters, the application (Premium version) is designed to work in tandem with what you are probably already using, with plugins for Photoshop, Photoshop Elements, Lightroom, and Aperture. So from a workflow perspective, you're already in familiar territory... just select the appropriate menu item in your RAW processor (e.g. File > Plugin Ex-

tras in Lightroom), and you're immediately transported to the Perfect B&W interface, with your selected photo already opened. While you also have the option of running the application in stand-alone mode, we feel most will take advantage of the convenience afforded them by the plugin functionality. However, the software does indeed use fairly significant system resources, so if you're on an older computer, you may wish to take advantage of the stand-alone option in order to get maximum performance from it.

Once Perfect B&W has loaded up, you'll notice the interface is laid out in a manner similar to Lightroom, with your image occupying the central frame and editing options available at left and right. In the stand-alone version there are two buttons above the histogram at right: Layers

and B&W, which serve as entry points to the two different aspects of the program, one for doing your conversion, and the other for making layer adjustments to it as you might in Photoshop. Note however, that if you've opened the image from within Photoshop, the layers option is disabled in favour of the powerful tools at your disposal from within that former application.

After opening the image, (and selecting the B&W button if you're using the stand-alone application) the software performs a basic black and white conversion — pretty much retaining the brightness and contrast features of the original work. At left, you'll be presented with a wide variety of presets which feature your image in preview mode as a thumbnail. If you've a large monitor, it is often helpful to drag the section divider to

the right in order to display the thumbnails in a larger format to gain a better appreciation of your options in advance of selecting one.

Choosing a preset is a great starting point (and sometimes all you'll need to do) to get your creations well on the road to realizing their full black and white potential. Once you've selected one, you'll see the options in the right hand pane change to reflect your choice. You now have the colour mix, film grain, contrast curve, tone, blending modes and so on to edit, and enhance the image to your satisfaction.

While you are able to create quite dramatic alterations in your photograph with just a few simple edits, we'd advise our readers to proceed with caution, as the end result can look ham-fisted and unnatural if you take





things too far. Of course, there is always the undo option, should you find yourself having ventured into the realm of the absurd (which we did on several occasions while testing the limits of this software's capabilities). Further, you may simply reselect the preset you started from, and all will be well again.

GRAIN GAIN

One of the main problems in creating black and white images with digital cameras, is the fact that they often lack texture — they're just too smooth! Sure, you can pump up the ISO or add noise in Photoshop, but there's just something missing when compared to old school film results. As a result, one of our favourite features in Perfect B&W is the ability to select from among 35 different classic film grains. onOne has faithfully reproduced the

non-uniform nature of the grain exhibited by these stock films, not by simulating them in software, but by actually scanning the originals — there's nothing like the real thing.

Within Perfect B&W you are free to adjust the intensity of the grain from zero through 100%, and even the size of it, up to 200%. This level of control is certainly welcome, especially for images that might already contain some degree of digital noise which you'd like to convert to a more pleasing, filmic look.

FUN FEATURES

The toner panel opens up a wide variety of options to the photographer: from antique looks to futuristic styles, and everything in between. The sliders enable precision control of the effect, allowing for the addition of

subtle hints of colour, or dramatic changes in cast — whatever the situation calls for. Of course, when employed in conjunction with the ‘Borders’ feature, you can really seal the deal on creating an authentic looking period picture; and many of these combinations are already available to you from within the ‘19th Century Processes’ presets panel.

Further, the ‘Blending’ panel, which includes all the blend modes familiar to Photoshop users, allows you to create some really interesting effects by determining the method in which the new black and white layer is mixed with its underlying colour original. What’s more, the ‘Glow’ panel enables you to add an ethereal quality to your images — perfect for that dreamy portrait or mystical landscape shot. Fun!

FINALLY

To put the finishing touches on your photo, Perfect B&W includes full-featured vignette and sharpening modules. While the former is pretty much a replica of what you’d get Lightroom or Adobe Camera RAW (though the addition of the ‘Style’ menu which includes Normal, Soft, and Subtle variations is a nice touch), the latter is definitely worth investigating!

The last thing you generally want to do with your image in the processing chain is sharpen it. Unfortunately, it is at this stage where many people go too far and ruin what would otherwise be an excellent photograph. Folks seem hung up on sharpness as an end in itself — “hey, I have this tack-sharp lens and an amazing camera body,



why shouldn't my images look ridiculously sharp?!" Well, there's sharp, there's too sharp to be flattering (particularly in portraits), and then there's straight-up unnatural.

Fortunately, Perfect B&W allows such a high degree of control over the sharpening process, and can provide so many pleasing variations, that hopefully photographers will exercise a modicum of good taste when employing it.

First, there are three kinds of sharpening available: Progressive, the default, which is best for images that contain a lot of fine detail, High-Pass, which users are better off selecting should their image portray larger shapes with fewer fine details, and Unsharp Mask, which anyone who has used Photoshop should be well familiar with. Beneath this drop-down are sliders which control the amount of the effect applied, a Halo option for creating more edge contrast (be careful with this one!), and sliders which enable the

user to preserve both highlights and shadows from over-sharpening and introducing unwanted noise. Finally, there is a control for preserving skin tones from the negative effects of sharpening and even a drop-down which allows you to select the ethnicity of the subject in question. Fantastic!

In testing we really ran on One's Perfect B&W through the wringer: importing huge files, selecting multiple effects while the image was still processing, maxing out the settings to see what kinds of digital abominations we could create, and more. We were only able to make it crash once (and we were really trying here), and for the most part the software stood up to our abuse admirably. In terms of utility, price, and the stunning images this application is capable of rendering, we can heartily recommend its purchase to anyone interested in getting the most out of their black and white photography.



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*PHOTO*Philosophy

Once upon a time, for the professional photographer certainly, there was no question as to whether you would utilize a light meter in support of obtaining a correct exposure for one's captures — it was simply an essential. Nowadays however, with the advent of digital, and in-camera metering systems that are so dramatically superior to what was previously available, many opt to forego this step. Is this the right choice?

STUDIO STRESS

I'm certain those of you who are familiar with the studio environment, will be acquainted with the lengthy process involved

in getting the lighting setup just how you'd like it — often requiring tiny, time consuming tweaks while your model stands around bored. Well, of course the solution to this is to do as much to prepare for your subject in advance. What about exposure though? As you aren't 100% certain what your particular model's skin is going to do under your lights, do you fire a bunch of test shots and make adjustments between them?

We believe what separates the truly professional from those merely aspiring, is the ability to a) make their subject comfortable in order that they are able to provide their best, and b) take as little of their day as possible. Models these days expect some measure of tweaking; however, spending

a bunch of time with your equipment versus them can have an effect on their performance. If they don't feel you know what you're doing (and the longer you take, the more they'll believe this), they're going to be less comfortable, with the attendant result being poorer posing. Additionally, spending the larger measure of time on them versus adjustments, makes them feel appreciated — ultimately yielding a superior end product.

So where does the meter come in? Utilizing one allows you to nail your exposure... the first time, every time. There's no guessing and making adjustments; trust it and you're golden. This is of course a huge time saver, especially between shots where you've altered the lighting setup. So, using a meter helps with both a) and b). Further, despite what many believe, hand-held meters are more accurate than those included in cameras.

ACCURACY COUNTS

There are those that believe 'chimping': checking the camera's LCD to evaluate exposure and composition; viewing the histogram; and looking 'blinkies' to determine whether they've blown highlights, is all that need be done to ensure an optimal capture.

There are three problems with this strategy: it relies on evaluation post facto, it is time consuming, its results are less predictable. In the first case, blowing your first exposure or two, only to correct on the subsequent ones is fine assuming the content of those latter images in terms of composition etc. is superior to the former. What if the best shot, aside from exposure, was your first

one? Well you've blown it... and fleeting moments are generally not repeated. Additionally, if you're shooting people, you'll tend to get less genuine expressions on their faces, the more shots you have to take. What you're generally after are those zygomatic smiles... forced, fake ones just don't cut it; and that's exactly what you'll be getting after a few retakes.

Secondly instead of taking one shot, nailing it, and moving on, chimping is not only wasting your subject's time, but your own. It could well be the protracted

interval you've spent on capturing one image is responsible for your missing another, perhaps superior photographic opportunity that occurred shortly thereafter. This isn't to say that you can always meter in dynamic situations where lighting conditions are changing and events are happening quickly; however, if you've established



exposure baselines for areas of the room in advance for example, you can determine if your in-camera meter is making sense in advance of shutter release, and adjust your exposure compensation accordingly. Finally, in-camera meters use light reflected by your subject, instead of directly measuring the light falling upon it, as is the case for the hand-held variety. Matrix, the metering mode most commonly utilized by photographers (by an order of magnitude), then compares what is being read to a database of thousands of images the camera has stored within it to determine which most closely matches, and adjusts the exposure accordingly. For the most part, this works surprisingly well; however, for tricky lighting situations such as those with a high dynamic range, or conversely, low-key captures, you're often forced to reshoot, as the

on-board meter hasn't correctly determined your intent, and has delivered an exposure. This often leads the photographer to switch to either centre-weighted or spot metering for a second attempt — again wasting time and creating the problems as outlined above.

Incident meters on the other hand provide an accurate measurement of the light falling on your subject and provide you with perfect exposure settings every time. As you'll see in our review of Sekonic's new L-478DR meter elsewhere in this issue, a meter can sort out all kinds of difficult situations your in-camera meter will have problems with. So while they won't improve your composition, skill in arranging light sources, or taste in model selection, meters can definitely give you an advantage in the studio and out, and is why we recommend their usage wherever practical.



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TIPS & TRICKS



While in the last issue of Dark-roomPro, we covered the release of Adobe Photoshop Lightroom 5, and highlighted the major new features, we thought this time around we'd provide some tips and tricks to help our readers get the most out of this versatile software package. The application is certainly chock full of somewhat hidden goodies, so let's just dive right in!

SMARTER COLLECTIONS

Smart collections were introduced way back in Lightroom 2, and enabled the user to automatically group images together based on specific metadata; for example, those shot with a particular lens. Now Lightroom 5 offers you even more options to employ as collection inclusion criteria. By adding a new smart collection, or supplying additional rules to an existing one, you are able to select by bit depth, colour mode (grey-

scale to add all your black and whites for example), colour profile, the existence of a smart preview (which is great for discovering which ones don't and thereafter adding them), and file type — which now even includes PNG support. Very smart indeed!

Standard Collections have also been upgraded with the option to set one up as a 'Target Collection', which affords you the ability to add images to it by simply hitting the 'B' key with a photo or series of photographs selected. This is *far* easier and faster than dragging and dropping them to the desired collection. You may either create a new collection and specify your wish to set it as the target, or add this option to an existing collection by right clicking on it and choosing 'Set as Target Collection'. Note however, you may of course only have one target collection active at any given time.

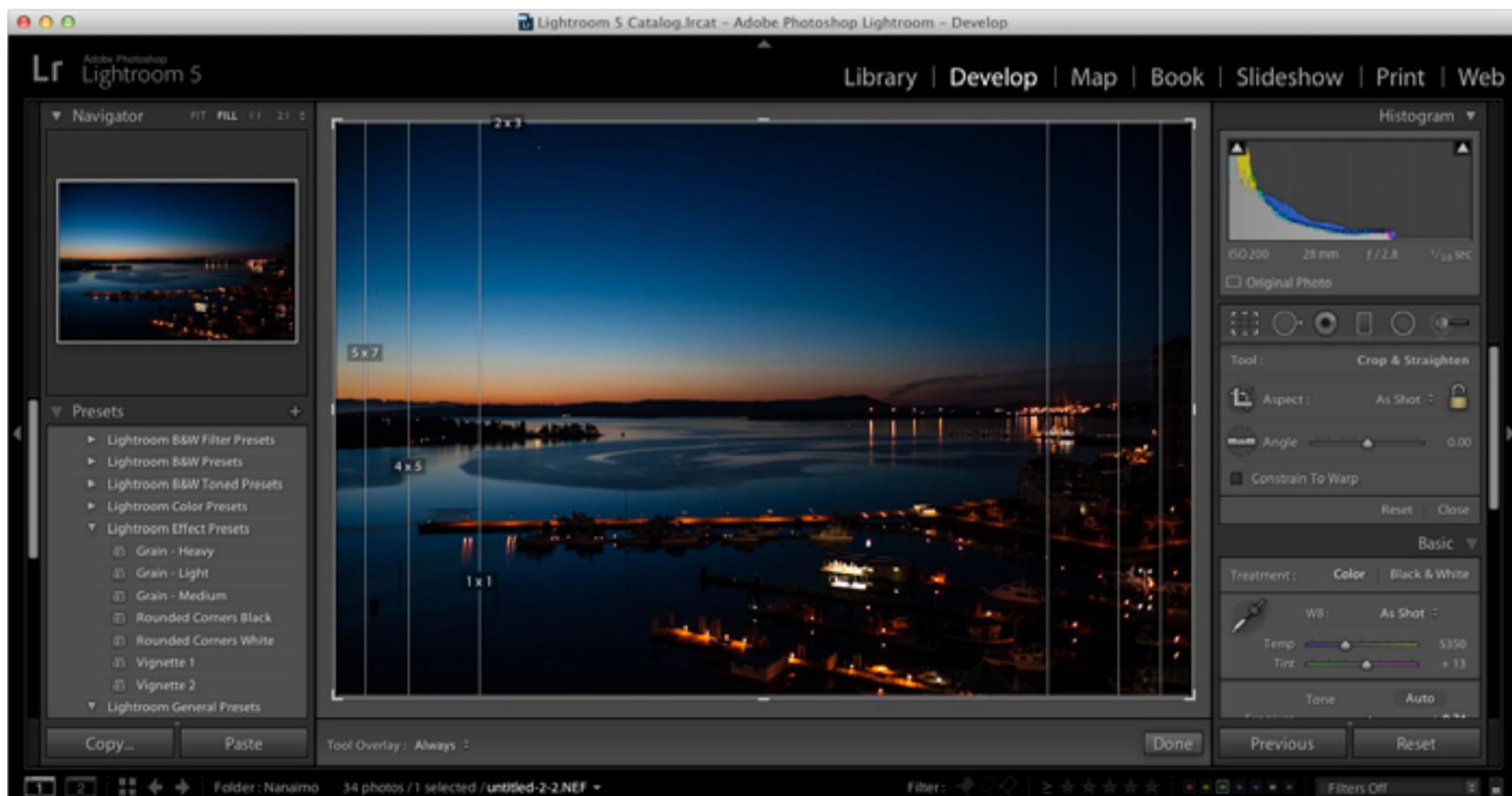
PREFERABLE PREVIEWS

Lightroom has always been great at moving between different views of your work, comparing and contrasting between prospective selects and so on; however, the way some of these features were implemented left a little to be desired. Version 5 has tweaked some of these more familiar workflows to make them more even convenient. For example, hitting the 'F' key, which heretofore cycled through various diminutions or additions to the interface to either give you a larger or smaller view of the image you were working on, now gives you a full screen view of your photo immediately. This is welcome news to most! For those that still wish to utilize the previous behaviour, fear not: it's still available by simply hitting Shift-F instead, and cycling through the various views.

Additionally, the crop tool overlays have been enhanced. While certainly most are familiar with the standard grid and rule of

thirds guides in the crop tool overlay, you now have access to crop mark overlays for various aspect ratios. For example, you might wish to see what an image might look at when printed 4x5... simply cycle through the various crop overlays by hitting the 'O' key while in the Develop module with the Crop tool selected, and soon you'll see crop aspect guides over top of your photograph.

While doing this, you may have noticed overlays you were unfamiliar with... spiral, diagonal, triangle etc. Don't worry if you never use these, and don't want to cycle through them every time. You can choose what options you'll see while progressing through them by selecting your preferences under 'Tools - Crop Guide Overlay - Choose Overlays to Cycle'. Additionally, you can determine which aspect ratios you'd like to display by selecting from those available under 'Tools - Crop Guide Overlay - Choose Aspect Ratios'. Handy!



One more notable addition to image preview in Lightroom 5 has been the inclusion of grids and guides in Loupe mode. To access these, all the user need do is to enable them from under the 'View - Loupe Overlay' menu. Holding down cmd on Mac, or control on Windows, with the grid enabled allows you to alter the size of the grid elements, as well as determine its opacity in order that it not obstruct your view of the underlying image. Additionally, with this key depressed, the guide can be repositioned by dragging the intersection with the mouse. Further, to centre one of the guidelines, simply double click on it.

PROOF IT!

For those of us who do a lot of printing — and we hope you're among them — soft

proofing is a key step in determining what the final product will look like on the substrate you have elected to render the image on. Omitting this procedure could well leave you frustrated, and cost you unnecessary ink and paper expenditures.

While in previous versions, Lightroom provided this facility, accessible by selecting the 'S' key in the Develop module, you weren't able to see the current image and the proof side-by-side... until now. Version 5 enables the user to employ the Before and After button while in Soft Proof mode to spot differences in what appears on your screen and what's likely to be printed, in a significantly more convenient manner. You can see the images side-by-side, top and bottom, or split screen (our favourite) in either of these configurations. Printing perfection just got easier.





IN THE LAB

For those of us well familiar with the Lab colour space, its uses are myriad. Those less so, will find our 'Demystifying Lab' article elsewhere in this issue very helpful indeed! In an effort to cater to the former group, Adobe has included the ability to view Lab colour values. All one need do is right click on the histogram, select 'Show Lab Color Values', and then mouse over any portion of the image to see the exact measure of this location in Lab. While a nice little addition to Lightroom,

most Lab work will be still be done in Photoshop; though we look forward to future versions which may include enhanced support for this very interesting gamut.

Well there you have it — some of the lesser known, yet powerful features from what will undoubtedly prove to be the go-to RAW processor and cataloguing software for discerning photographers everywhere. Congratulations Adobe, on a truly worthwhile product release.

GEAR GUIDE

SEKONIC L-478DR REVIEW

Having used hand-held light meters for years, we are always excited to see new advancements in the technology; after all, anything that makes working as a photographer easier is always welcome. That being said, we have to admit to feeling a little incredulous about Sekonic's new meter, the L-478DR, touted as being the world's first to feature a touch-screen interface. We wondered if any additional utility would actually be gained by the implementation of this technology, or whether it was simply eye-candy designed to entice the buyer. Certainly, it has the 'Oooh shiny' effect on photographers; but we wanted to see what actual benefits it conferred. To this end, we contacted Sekonic who were kind enough to send us an evaluation unit to put through its paces.



FIRST IMPRESSIONS

Upon opening the box, we were initially surprised at just how small the unit was. It fits perfectly in the palm of your hand, measuring 57mm width x 140mm length x 26mm depth and weighing in at only 140g (2.2" x 5.5" x 1" @ 5oz), and promised to deliver much for such a diminutive meter.

Powering it up takes a few seconds while loading the operating system and user configuration, and then you are greeted by large, easy to read interface elements, clearly designed to make operation as intuitive as possible. While originally concerned about the display's readability under bright sunlight, we are happy to report that it suffers little from such conditions. Additionally, the manufacturer has included an anti-glare film

that can be placed over the screen, further improving this performance characteristic.

Adjusting aperture, or shutter speed settings is done via tapping or sliding your finger/thumb over the appropriate interface element, behaviour anyone owning a smartphone or tablet will be well acquainted with. The screen is not however, as sensitive as an iPhone's (for example), and will take a little getting used to for those more familiar with the operation of the capacitive screens found in those devices. Further, as the control for adjustment of shutter speed or aperture (depending on what mode you are in) also displays its current value within the same element, you may find your thumb

“Looks a little daunting, but is actually quite easy to get the hang of... and extremely useful!”

obscuring it should you use that digit to input your settings. We found this particularly true when adjusting aperture. Of course this is a minor concern, simply rectified by using your finger instead, though perhaps having the option of displaying the value below an adjustment control rather than within it might have been a better way to go here.

This brings us to a realization however: obviously this is one area where a touch-screen interface is superior to static physical controls, as implementing alterations like the suggestion above may be made by simply updating the operating system.

SOFTWARE STABILITY

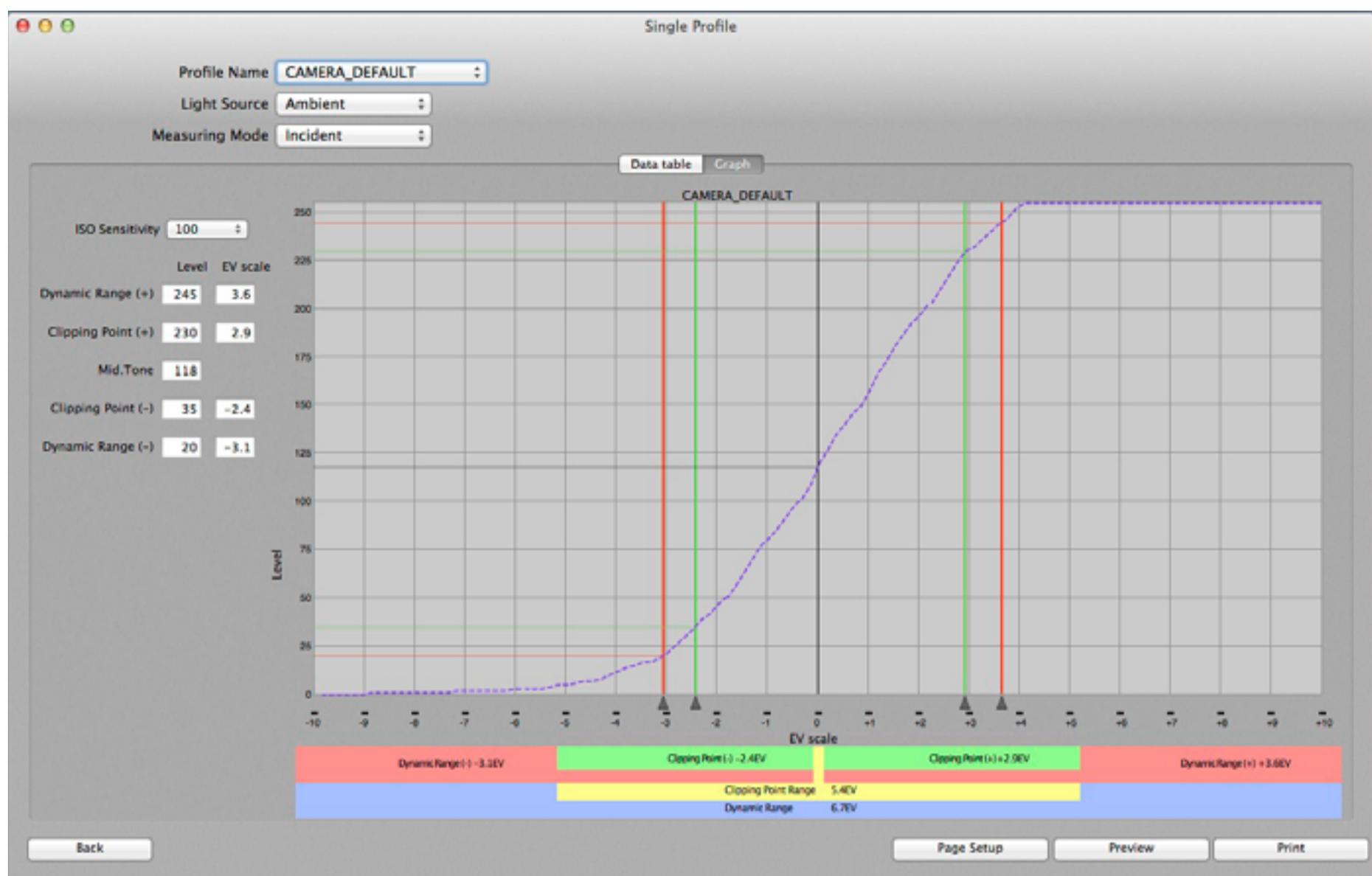
Speaking of updates, Sekonic has included software which automatically detects and informs the user of their availability — very

handy. While we never had any issues with the software onboard the meter, we had less success with the update functionality of the Mac desktop application. Despite it indicating the fact that updates were indeed available for both the desktop app and the meter, it failed to update the app despite 5 attempts, and took 3 tries to get the firmware updated on the meter. Additionally, we had to manually terminate the app using the Activity Monitor on a number of occasions where it had crashed or gotten stuck in an endless loop of error dialogue boxes. We're certain that the update addresses these issues; unfortunately, as mentioned, we were un-

able to download it utilizing the built-in functionality.

Once we had upgraded the meter firmware however (and given up on updating the desktop application), we decided to take a look at the other software features available to us on our Mac. Certainly you can more easily adjust the default settings (including things like colour scheme, dimmer delay, and auto power off that you are likely only to adjust once) and download to the meter via USB; however, we were looking for some real advantages not available on the unit directly.

Among the most impressive features the L-478DR brings to the table, is the ability to profile up to 10 individual cameras, with customized exposure settings for each. The profiling utility looks a little daunting at first, but is actually quite easy to get the hang of... and extremely useful. Enabling photographers to store the unique dynam-



ic range and clipping points of their bodies in memory, the meter graphically depicts these at the bottom of the display to ensure the current measurement falls within bounds. As a result, the L-478DR empowers the user to shoot with confidence, knowing their exposures are going to be spot-on... every time. Very cool indeed.

IN OPERATION

To test the meter, we decided to put it head-to-head against its predecessor, the Sekonic L-358, as well as the iPhone app, 'Light Meter'. Of course this latter competitor is unable to trigger flashes, and thus of pretty limited utility in the studio. However, as a tool to measure ambient light out in the field, we wanted to see how it compared — as you mightn't always have your trusty Sekonic on-hand.

Over the course of our evaluations, we discovered that in the studio, the L-358 and the L-478DR provided pretty much exactly the same readings — even down to precise percentage displays of mixed strobe and ambient light. So no real advantage there... however, where the L-478DR really began to shine over its older sibling was by employing a combination of two features: the Contrast Function, and Radio Triggering and Power Control.

First, we used the contrast function to measure the evenness of light across our backgrounds — that's fine, we could do this with our the L-358 too — but instead of running back and forth to our lights and making adjustments to compensate, we merely used the strobe power slider controls on the meter directly! Employing wireless technology by Pocket Wizard, the L-478DR is able to

control firing and specific power levels for compatible strobes over 32 channels, in four discrete zones. Further, this allowed us to obtain levels and set precise lighting ratios for our portraits, quickly and easily. This is a great feature, and saves a ton of time.

Moving outside and abandoning our flashes, we discovered the L-358 provided readings very slightly different than its younger brother, resulting in shutter speed recommendations of up to 1/10 of a second faster for the same aperture setting in some low-light conditions. Upon examining the exposures, we felt the L-478DR more accurate, and surprisingly, the iPhone app concurred more often than not... good to know!

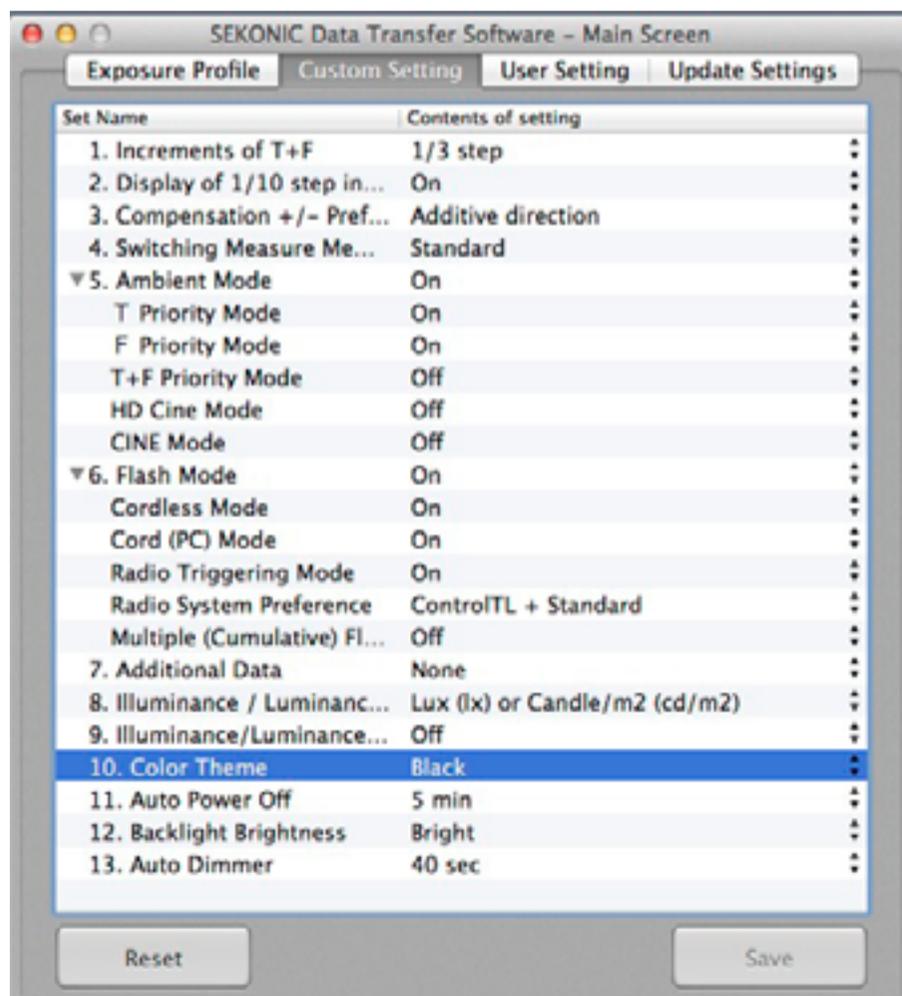
In an effort to prove the thesis outlined in this issue's PhotoPhilosophy column regarding the superiority of hand-held incident meters versus those resident in camera bodies, we took this shot of friend of the magazine, Irvis Mabel. Here she is, demon-

strating a difficult lighting situation: standing in shadow with an extremely bright background containing sunlight reflected off the ocean and a bright sky. We weren't using flash (though to obtain a balanced exposure you'd have wanted to) because we wanted to see what kind of natural subject exposure results we'd obtain using matrix, spot, and centre weighted metering on the camera versus obtaining an incident measurement from the meter... and let's face it, you don't always have a flash with you.

As anticipated, the L-478DR performed perfectly the first time, providing good subject exposure and blowing out the background, while the on-camera meter struggled. Matrix failed totally, providing an extremely under-exposed capture in an attempt to balance the scene. Centre weighted was marginally better, and in this case spot provided the best of the three. Still, the meter provided the best results and we were happy, if not surprised to see our assertions proven true in a real world example.

OTHER ADVANTAGES

When compared to the L-358, the L-478DR does indeed have quite a few new features that I will actually use (despite having tons that I likely won't... your mileage may vary). First there's automatic filter compensation. They've included standard values for a variety of filters, and even enable you to apply them in a pack of up to 4 at a time. So I can select for example, CTO Full (see the Light Modifiers article elsewhere in this issue!), and be confident my expos-





ure settings are taking this into account. Further, the meter also allows the photographer to set static values for both shutter speed and aperture, and provides the correct exposure using ISO. This is very handy when you want exact control over depth of field while maintaining a minimum shutter speed for action shots, and surprisingly, not a feature available in the L-358. Finally, the touch-screen interface provides much improved access to all the meter's features — which is certainly better than having to manipulate dip switches located in the battery compartment of the L-358!

RECOMMENDATION?

So should you pull the trigger on a shiny new Sekonic L-478DR? Well that depends...

If you own strobes that feature Pocket Wizard technology for wireless control, then the answer is an emphatic yes! If you own multiple camera bodies and frequently employ several in a shoot, then yes!

If you don't, and already own an older meter, your decision is tougher, as the differences, while considerable and certainly not entirely covered by this review, may indeed be just what you're looking for... or may not. It's up to you to justify the expenditure for additional or improved features gained thereby.

If, on the other hand, you don't already own a meter (and you should!), you can't go wrong with the L-478DR, retailing at approx \$469 USD. We heartily recommend it.



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SECRETS



Light is the photographer's most valuable resource and is available to all; the ability to shape it effectively in the studio however, is what often separates the professional from the amateur. In order to confidently approach this task, one needs to understand two things: what are my lighting goals, and what are the tools at my disposal to help me achieve them?

While In Volume II, we discussed various lighting styles: short, broad, butterfly, Rembrandt, edge, etc. which help us to answer the first question; this time around we'll address the second, and cover the characteristics of specific light modifiers.

UMBRELLAS

Mary Poppins may not have been an aspiring photographer (well we never asked her, but

where would she find the time?), but like her, no self-respecting studio shutterbug should be without one... or several for that matter. There are two main varieties: reflective, and shoot-through, though some manufacturers offer attractive combos that feature both options. So what are they good for?

Well, first of all, when compared to similar light shaping options such as soft boxes, main advantages include portability and ease of setup. Further, for those just starting to build their studio gear collection, they are significantly less costly than their larger counterparts.

Shoot-through umbrellas are made from translucent materials which allow the photographer to fire a strobe directly through them (hence the name). This essentially provides a large diffuser, softening the harsh light that is emitted by flash and dramatically reducing unsightly shadows that would otherwise mar a photograph.

The reflective variety, on the other hand, are utilized by bouncing the strobe off the inner surface and onto the subject. This inner material may be standard white, silver to achieve a cool, contrasty effect, or gold to warm the subject up.

The differences in terms of the quality of the directed light (beyond colour temperature generated by the different reflected surfaces) however, is the amount of spill (stray light not landing on your subject) and contrast provided by each. Shoot-through umbrellas offer more spill and lower contrast, meaning the shadows will be more diffused and your background will receive more



light, while the reflective variety provide the opposite, with more contrast and less spill.

This of course assumes equal distances between flash, modifier, and subject when comparing the two. One of the primary advantages of shoot-through however, is the ability to move the flash much closer to your subject without your rig appearing in-frame. This enables the photographer a significant degree of control over power required, spill, and the softness of the light (which can be very soft indeed the closer it is to the subject). For this reason, many photographers opt for shoot-through over their reflective counterparts; though, as always, the situation and desired result may dictate otherwise.

SOFT BOXES

Similar to a combination of the shoot-through and reflective umbrella, soft boxes often have reflective inner surfaces (typically silver), but are designed for the strobe to

shoot through inner baffles and a translucent outer fabric. The baffle's purpose is to eliminate hot spots on the outer surface, resulting in a uniform and very directional light source that offers the photographer great control over exactly where they wish the light to fall.

Perfect for individual portraits, soft boxes, as their name suggests, render very soft illumination and are easy to position close to your subject without appearing in-frame. They require a little more practice, and are a little less forgiving than shoot-through umbrellas, as they deliver less spill and so must be positioned with more precision to get the best results. Additionally, you may not wish to use them when shooting groups larger than two people standing close together, as you'd need a very large box indeed, or be required to move your strobe back — defeating the purpose of the soft box by creating harsher light in so doing.

Three main shapes of box are available to the photographer: square, rectangular, and octagonal. Given the intent of these light modifiers is to simulate light which you might receive from a window (see Rembrandt lighting in Volume II's Studio Secrets), rectangular and square are the most common. However, octagonal soft boxes are becoming increasingly popular due to the circular specular highlights they create in the subject's eyes, which look great given their similarity to the shape of the sun.

While soft boxes can work well on their own, given their characteristics as outlined above, you'll more often see them used in tandem



with fill lights and other multi-strobe and reflector combinations. No studio setup is complete without them however, and you'll be amazed at the beautiful effects you are able to achieve with a little practice and patience.

SNOOTS & GRIDS

No, snoots aren't your well-to-do neighbours who look down their noses at your meagre holdings with disdain... ok, well maybe they are. From a photographic perspective however, snoots are conical devices which are affixed to your strobe in order to produce a focused beam of light. When you need maximum control over where your light falls, or are trying to create

spotlight effects, the snoot is your friend.

Note however, if you are using a snoot with a portable speedlight, you'll want to set it for its maximum telephoto range, as there's no sense wasting the power it would normally require in wide-angle mode, given you're restricting the light to a tight beam.

Often used to illuminate your subject's hair and thereby create separation from the background, these modifiers can however yield a somewhat sharp falloff, which, should this not be your desired effect, may be mitigated by the utilization of yet another device: the grid.

Grids are essentially a honeycomb of tiny snoots, and can even be placed over or within a larger snoot for more defined results. A grid is very useful for tightening the beam while softening your edges and falloff. Additionally, they're excellent for creating effects on your background, particularly when used in conjunction with coloured gels.

GELS

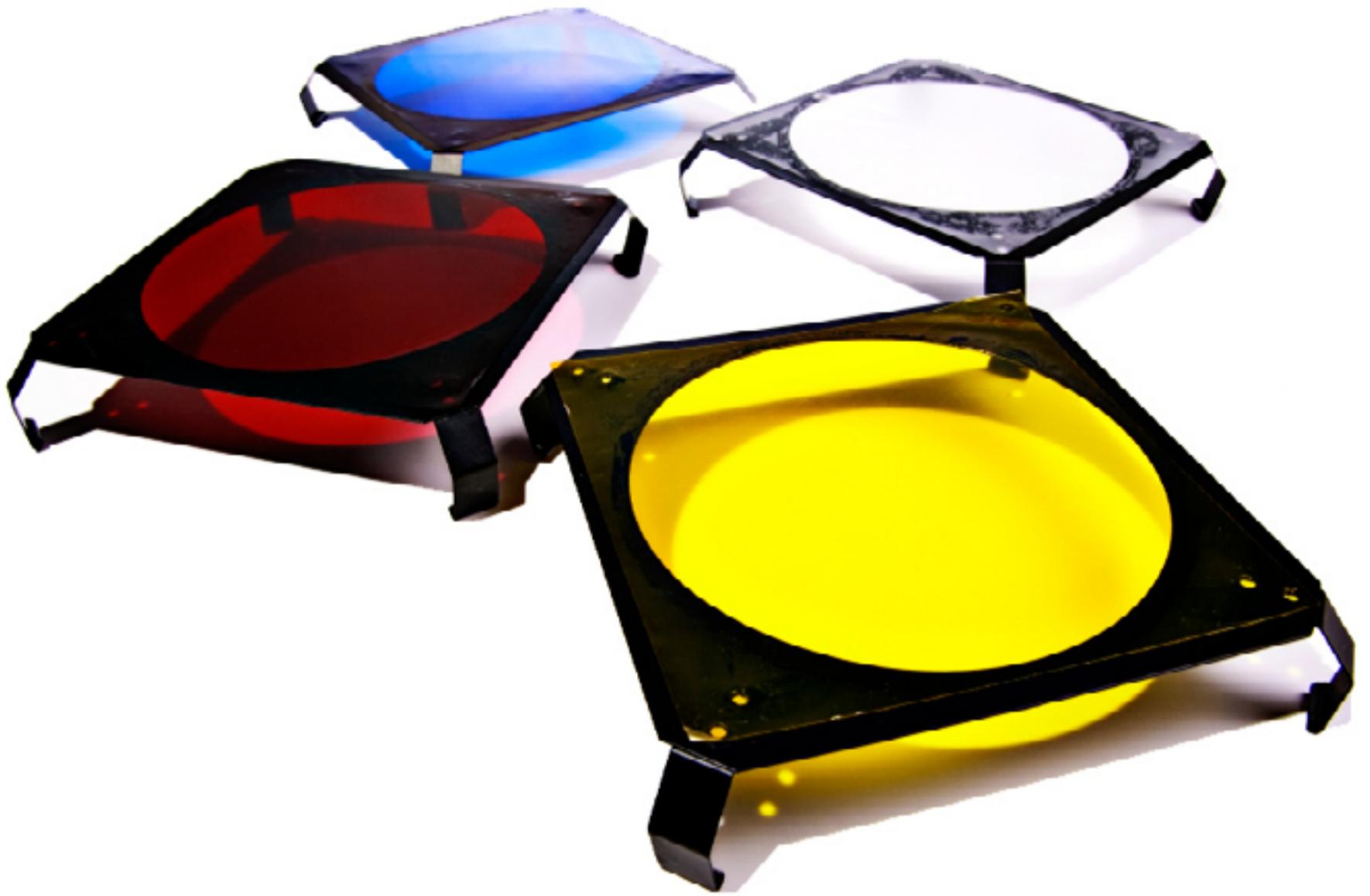
While gels can definitely be used to correct white balance in mixed lighting scenarios, and this is something you may often do when on location, most studios don't have to deal with this issue very often (except by choice, given the uniformity of their strobes' colour temperatures); and with the advent of digital and RAW, white balance is significantly less problematic than in the old days of film capture.

As the full range of what you can do with gels is beyond the scope of this article, we'll get started by providing some basic tips

on how best to approach their utilization.

As mentioned above, gels are great to use for creating coloured effects on your background. There are a few things to keep in mind when doing this however: for example, try to use colours that are drawn from, or are complimentary to your subject. You may want a bright red gel to illuminate a background and accentuate a similarly coloured lipstick your model may be wearing. Just be cognizant of the colours in the scene, and select your gel accordingly. Also, you'll often want to flag (partially block) your background light in order to avoid it falling upon your subject. Barn doors are another modifier which are quite helpful in achieving this goal.





If you're using gels to add some drama by directing them at your subject, be sparing. Colour is good, but too much of a good thing can lead to some pretty hideous results. Instead of using a full intensity CTO (colour temperature orange) gel on your subject, try using a 1/4 or 1/2. Balance it out with a complimentary colour for your background, say CTB (10 points if you can guess what this acronym stands for!). This combination of warm and cool can yield some excellent results, and is very frequently seen in cinema.

Finally, if you don't have gels, you can improvise and use items you have may around the house in their stead. Try firing your strobes through translucent coloured drinking cups for instance, or stained glass, or clear bot-

tles filled with coloured liquid... the options are only as limited as your imagination!

SUMMING UP

As we said at the outset, having a firm grasp of what your lighting goals are for a shot is critical to your studio success; but so is knowing what your tools are capable of, and when to employ each in support of their achievement. Experimentation and repetition will serve you well while getting to know your gear's characteristics, strengths, and weaknesses... and hey, pixels are free, so what's keeping you from their mastery? Nothing but time. Until next time, have fun!

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We have to admit to harbouring considerable skepticism upon reception of Adobe's announcement regarding their new software as a service plan dubbed 'Adobe Creative Cloud'. We felt that while a clever pricing scheme designed to entice prospective users without necessarily the means to purchase their software collections in the previous all-in-one box incarnations; ultimately, the product would end up costing users more in the long run, for what, at the time, we perceived as little additional benefit. Ok, so we were wrong.

While certainly a great pricing and marketing endeavour, Creative Cloud has indeed been a boon to both users and Adobe alike. On the latter count,

Adobe has benefited from the increased accessibility of their products given the lower barrier to entry, as well as augmented public exposure (via the complete Creative Cloud subscription option) to many of its products that heretofore were significantly less popular than their ubiquitous flagship, Photoshop. Not only this, but Adobe, who like Microsoft with their Office suite, in past actually benefitted from weak piracy protection, in that their products were so widely used that they became industry standards — later to be purchased by both corporate and private users alike. Now, Adobe's tight integration with the cloud significantly reduces opportunities for non-licensed use; and when coupled with the aforementioned lowered barrier

PHOTOSHOP

to entry and increased software lifecycle revenues, has the potential to dramatically add to the company's bottom line.

On the customer side, the benefits are myriad too. True to their word, Adobe has released substantial software updates on a tight schedule — significantly upping the ante in the game to their competitors. So, without further adieu, let's dive into the latest of them: Adobe Photoshop CC!

A BRIDGE TOO FAR?

The benefits begin to accrue immediately upon your installation of the software, in that Adobe Bridge has been excluded from the default install, significantly reducing the download size and software footprint on your machine. For Bridge fans, this may seem like a non-issue, as it is still available as a separate download within Creative Cloud; however, for those that used it seldom to never, this is welcome news. That said, Bridge offers some pretty robust features that are a godsend to those who have vast media collections to deal with and appreciate the interoperability between Adobe applications it facilitates; so while you aren't forced into its installation, you may well want to check it out.

CLOUDY ON THE CLOUD?

Ok, so what does this cloud deal actually bring to the table? One thing to bear in mind: Adobe Photoshop CC isn't just your favourite raster graphics editor with some Dropbox clone bolted on; it's a well thought-out package, designed to take full advantage of the collaborative features and mobility options

afforded one via robust integration with the Internet. As you'd expect, CC membership enables you to share content with others who may either download or comment on your work; however, they're not required to actually own a CC license themselves*. Additionally on the collaboration side, Creative Cloud includes a full membership on Behance, the leading social network for creatives. Here you can interact with a thriving community of designers, photographers, filmmakers and other industry professionals to get feedback on your project or work in progress, discover employment opportunities, find inspiration — or just hang out. A ProSite portfolio is included wherein you may store your projects and have them evaluated by whomever you choose. Further, the cloud affords you the ability to sync your application preferences across multiple machines. Access all your custom brushes, actions, swatches, gradients, styles and more from anywhere!



So whether you're at home or work, on a Mac or a PC, you'll feel right at home with everything set up just the way you like it.

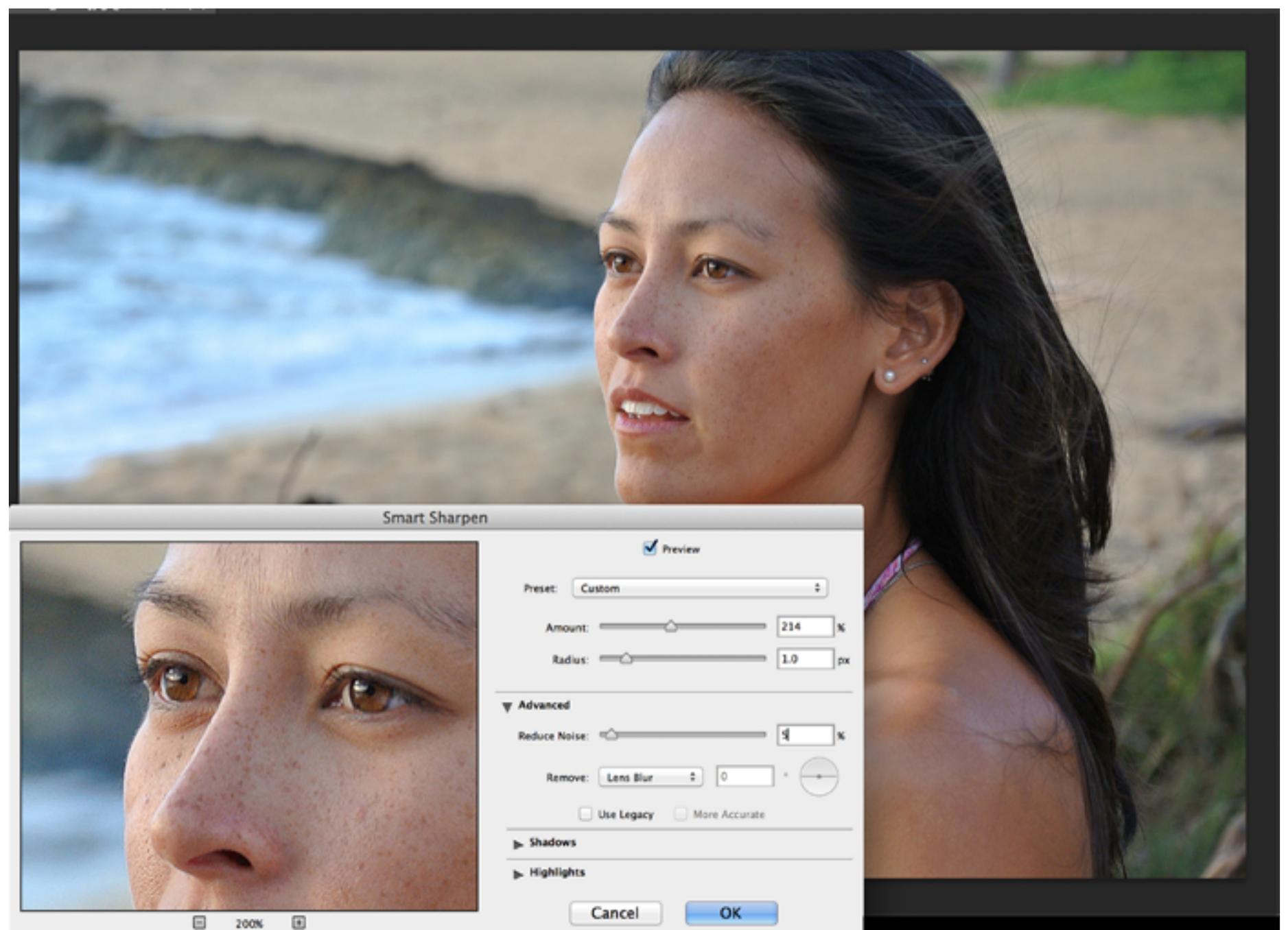
What's more, a new entry in the product suite has been included this time around: Creative Cloud Desktop application. This unobtrusive tray type app enables installation of any of the Creative Cloud components you have access to, keeps you abreast of, and allows you to initiate, any updates that may be available, notifies you of activity on your Behance account, provides access to font collections from the TypeKit (also included) site you may have created, and details your latest activity with the app.

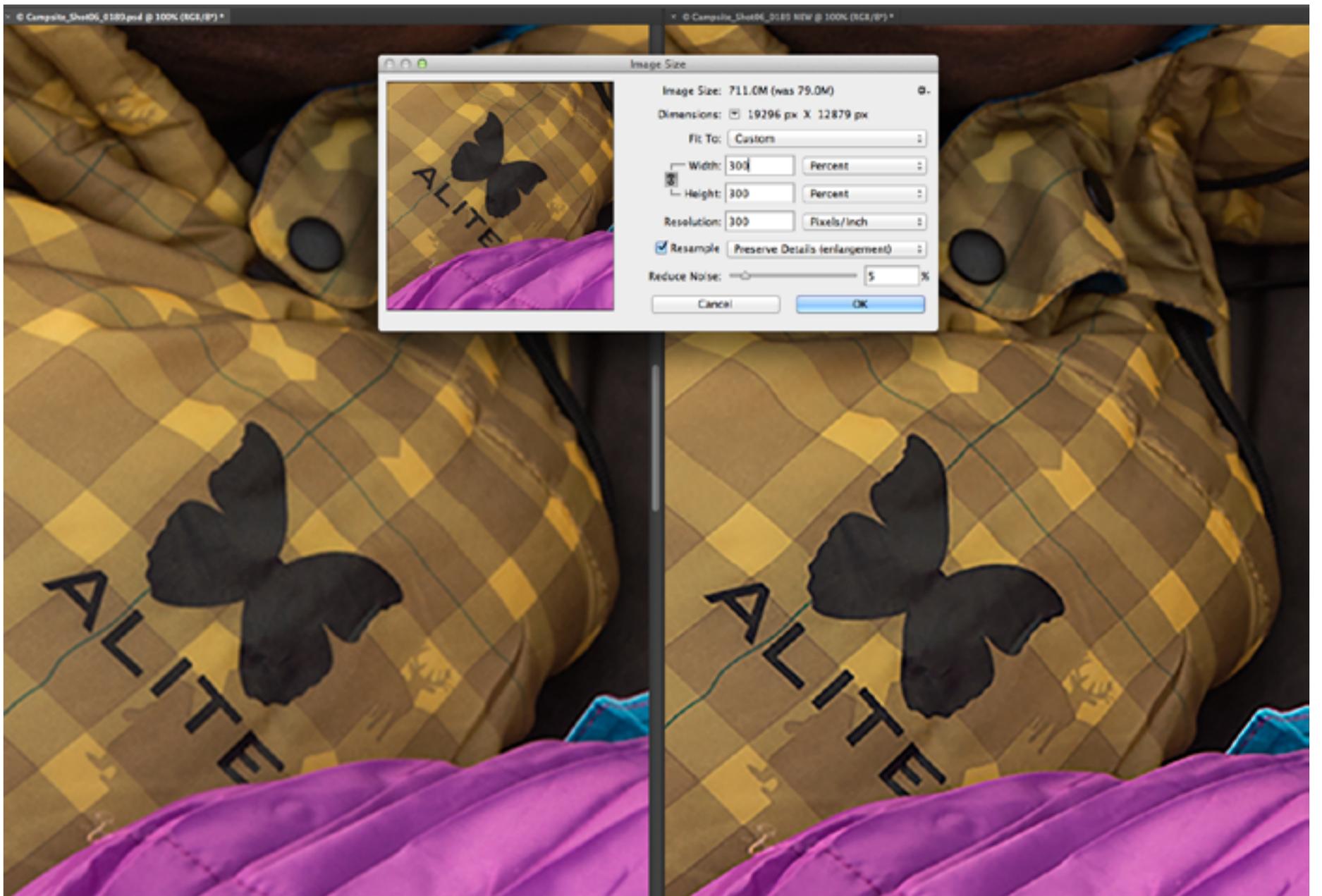
While we're not big fans of 'helper' applications that constantly run in the background

using your system resources even when you're not interested in running the associated parent program, Creative Cloud Desktop seems pretty useful in that it consolidates access to everything into one handy interface, and, of course, is easily removed from the the list of startup programs by editing the preferences.

THE GOOD STUFF

Ok, so other than cloud integration, what's new and exciting for photographers? Well, for starters, Smart Sharpen has been dramatically improved. This intelligent and adaptive sharpening tool enables significantly higher levels of image sharpening without the normally associated artifacts left behind: halos and noise.





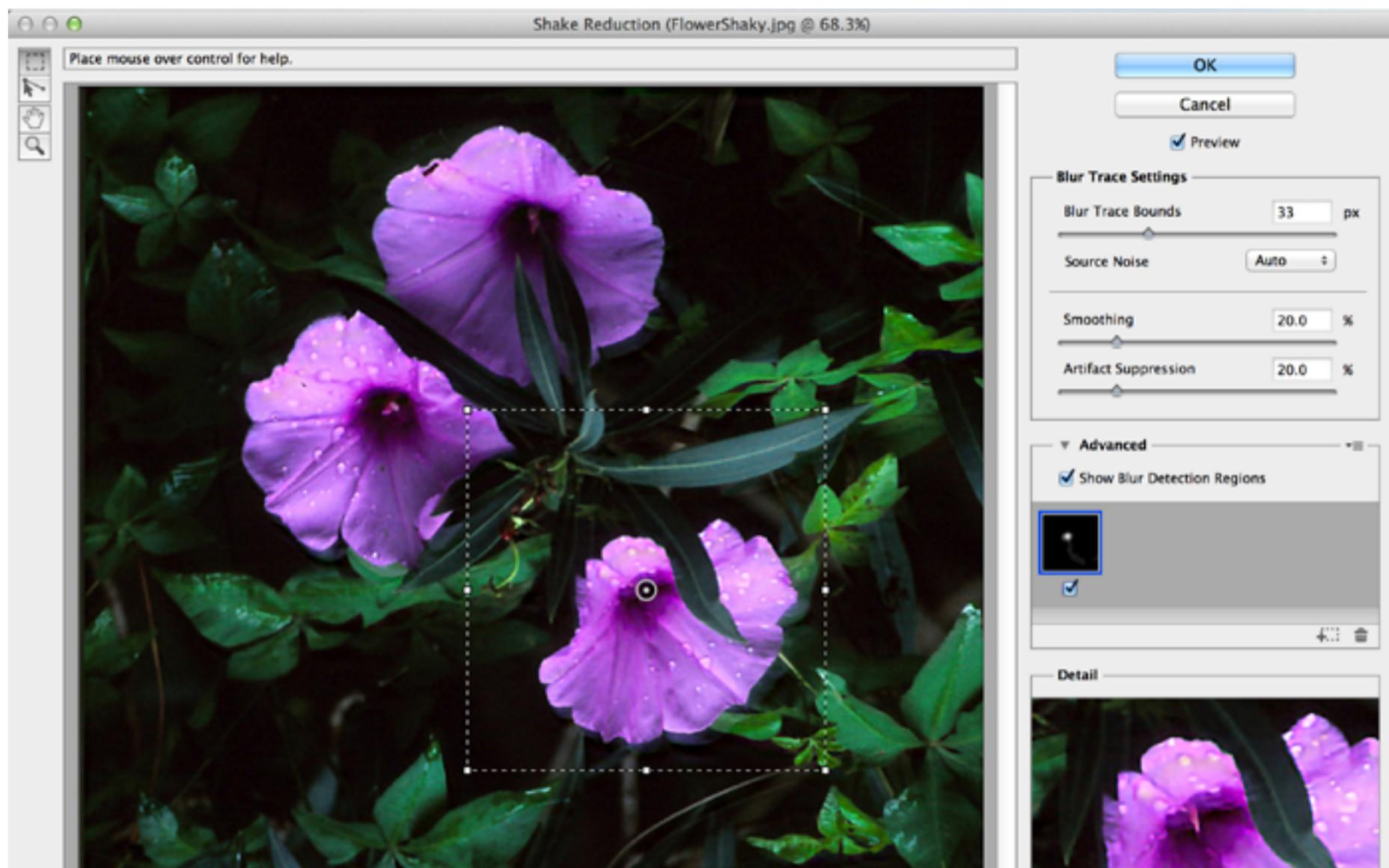
Despite sharpening advancements in different tools over the years, many of us fall back to the good old standard, Unsharp Mask. However, after seeing what the new Smart Sharpen can achieve, I doubt I'll be utilizing anything else in the foreseeable future.

We would advise our readers to exercise a modicum of common sense and restraint when employing this tool however. I distinctly recall thinking during the Adobe press conference wherein Smart Sharpen in Photoshop CC was first demonstrated "Whoa... that's ridiculous". Too much of a good thing is still bad. Creating enlargements of digital photographs has always been problematic. Loss of detail and the introduction of noise in

previous Photoshop versions when attempting this process forced many to look to third-party providers for solutions to this dilemma. With the introduction of Photoshop CC however, Adobe has clearly demonstrated the fact that it has made significant strides in rectifying this difficulty. The new algorithm's intelligent up-sampling preserves edge details and enables the creation of stunning enlargements you can be proud to hang on any wall.

FOCUS ON FILTERS

In previous versions of Photoshop, the only time you'd generally see the Camera Raw interface was upon importing a RAW file into the application. Now however, you may apply these non-destructive



adjustments to layers in your document, just like any filter! Furthermore, they even work on video... how cool is that?!

A huge boon to photographers, a new Camera Shake Reduction filter is available under Sharpen... and it's amazing. I went back through my collection of 'almost nailed it' shots I had been reluctant to toss (given everything other than inadvertent camera shake was perfect), and applied the filter — turning what essentially amounted to a pile of rubbish into actually usable material. Awesome. I will have to be more judicious with my delete key from now on!

The Liquify filter has also seen a huge overhaul, significantly improving its performance. Now you don't need a supercomputer to experiment with this powerful tool, and what's more, in Photoshop CC it can even be

used as a 'Smart Object' — non-destructively.

Finally, the Blur Gallery, first introduced in CS6 which enables you to produce tilt-shift effects, iris blur (simulated shallow depth of field), and field blur (multiple point selection and blur application within an image), is now also available as a smart filter. So feel free to experiment liberally... it's all non-destructive.

CONCLUSION

While we've just barely scratched the surface of all the new features and tweaks Adobe has brought to the table, we feel that even the Photoshop CC has definitely lived up to the promise the company made: to repeatedly bring comprehensive and value-packed updates to their products on a very aggressive schedule. So should you take the plunge and spring for the new version? Definitely.

*Officially 'Coming Soon' from Adobe.

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REFLECTORS

No, this article isn't about bicycle safety, or attracting search planes upon becoming lost in the wilderness; it's about using and shaping available and generated light in support of creating a more pleasing photograph.

DUDE, THAT'S HARSH!

So in which situations are you likely to wish to employ a reflector? There are several; however, most common among them would definitely be outdoor portraiture. When you're shooting outside, you often run into the difficulty of harsh shadows falling upon your subject due to bright sunlight. While the weather might be lovely, your photos won't be if they feature heavy shadow beneath your model's eyes, nose, and chin.

So what to do? Reflectors to the rescue!

There are a wide variety of reflectors available; however, the most frequently employed feature surfaces of either gold, silver, or white. Each has their particular specialty: gold is used to add warmth to portraits; silver produces a harsher light (similar to flash), which is great for adding specular highlights in your subject's eyes particularly on duller days; and white yields a nice diffused light (similar to that you'd get from a soft-box), and is generally the most useful of the three. Typically, reflectors come in collapsible, easily transported discs which are designed with a different surface on each side, doubling their utility. Of course

you're not limited to commercially available options; and if you're creative, you'll find a number of items you can use in place of them, including foam core, poster board, metallic wrapping paper, and so forth.

IN ACTION

Ok, fine. So how do you use a reflector to greatest effect? Well, the first thing to bear in mind is that they act just the same as a normal light source (such a strobe), in that the closer they are placed to the subject, the softer the light. As this is very often the desired effect in portraiture, what you'll want to do is place the reflector as close to your subject's face as possible, without it encroaching upon your frame. Angle it in such a manner as to be directly opposite your light source, adjusting slightly to achieve nice fill light, without washing your model out and losing definition (generally not a problem unless your source is very strong).

But what if you are alone? Not all of us have access to assistants, so you may have difficulties in maintaining your reflector's orientation. Certainly, you may employ tripods and c-stands to assist in this regard, but this means you're carrying around a bunch of extra crap that you mightn't otherwise require. The simplest solution to this dilemma is to have your subject hold the reflector for you! Angle and position the device for them while they are holding the opposite side, and have them freeze in that position while you take the shot. An unfortunate side-effect of utilizing this technique however, is the tendency of models to be concen-

trating more on holding the reflector than looking good for the shot or the inverse, letting your new light source drift while they are intent on providing a lovely smile.

Alternatively, you can use camera bags, low walls, tree stumps whatever you discover nearby that can provide a stable support for your reflector. Better still, by use of a tripod (or bean bag, or whatever camera support you can come up with using options readily at hand), you can employ your camera's timer to enable you to approach your model and position the reflector yourself in advance of the shutter being activated. It's helpful to put down a mark [generally gaffer's tape, but you can use anything a rock, piece of bark, etc] in order to indicate where you should stand otherwise, you might find yourself accidentally in-frame; and while I'm certain you're just as attractive as your model, that's probably not what you're after.

Working with natural light and reflect-



ors as a sole means of supplementary illumination is challenging at best, as the light source is always changing and you have to be on your toes to ensure you capture what you're after. Nobody said the universe was perfect but as Tony Horton says, "Just do your best, and forget the rest."

INDOORS

The effect of reflectors is often more subtle indoors, but definitely beneficial in dealing with both natural light and studio situations. When trying to soften the effect of Rembrandt lighting [Ed. See our article on single light studio techniques in issue Volume 2] on the shadow side, a white reflector is often called for, and can provide that little bit of extra oomph your portrait needs. This may indeed be the only supplementary light source required, when for instance, working with a window as your key light. In the studio, where light sources are more readily available, you mightn't find as much utility from smallish reflectors, but large foam core 'V-Flats' and so forth are far more frequently employed.

NOVEL USES

Photographers are known for their ability to think outside the box, and devise creative solutions to everyday problems they encounter in the environment. Here are some great ideas for using reflectors in unexpected ways:

Try using one as a working surface in dirty environments. This is great for swapping out lenses and placing props where otherwise they might become soiled or damaged. Make sure you have the white side up, as it is



far less resistant to dirt than the metallic side.

Use one as a fan not only does this allow you create that 'windblown' look in the absence of a mechanical device, but you can keep your model cool as well!

Try using it as a plain white background for headshots if you don't have ready access to a real backdrop where you're currently located.

Finally, you can use them to actually subtract light. If you use a black reflector you may not only utilize it to shade your model on one side (though more often you'd use a diffuser for this purpose, which allows a smaller amount of diffuse light to fall on your subject, essentially turning the sun into a soft-box), but in bright environments it also helps prevent light reflecting on to that side from other unexpected angles.

So, there you go now get out there and practice! While it may take a bit of experimentation and time before you become confident in their use, you'll soon wonder how you ever did without your trusty reflector.

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